THERMAL ENERGY COMPANY

183 IBLA 126 Decided January 8, 2013

United States Department of the Interior
Office of Hearings and Appeals
Interior Board of Land Appeals
801 N. Quincy St., Suite 300
Arlington, VA 22203

THERMAL ENERGY COMPANY

IBLA 2011-187 Decided January 8, 2013

Appeal from a decision by Administrative Law Judge James Heffernan affirming the rejection by the New Mexico State Office, Bureau of Land Management, of coal preference right lease applications. NMNM 8128, 8130, 11670.

Affirmed.

1. Administrative Procedure: Burden of Proof--Hearings--Coal Leases and Permits: Applications--Coal Leases and Permits: Leases

At a hearing before an administrative law judge involving whether lands subject to coal preference right lease applications contain commercial quantities of coal, the burden of proof is on the applicant to show by a preponderance of the evidence that there is a reasonable expectation that the revenues from the sale of the coal will exceed the costs of developing the mine, implementing environmental measures, complying with applicable law and regulations, and both mining and marketing the coal. Where the applicant fails to meet this burden, the administrative law judge properly denies the preference right lease applications.

APPEARANCES: Alan C. Kohn, Esq., and John Klobasa, Esq., St. Louis, Missouri, for appellant; Paul E. Frye, Esq., Albuquerque, New Mexico, Greg Kelly, Esq., and Attorney General Harrison Tsosie, Window Rock, Arizona, for Intervenor The Navajo Nation; and Frank R. Lupo, Esq., Michael C. Williams, Esq., and Sue E. Umshler, Esq., Office of the Regional Solicitor, U.S. Department of the Interior, Albuquerque, New Mexico, for the Bureau of Land Management.

OPINION BY ADMINISTRATIVE JUDGE JACKSON

The New Mexico State Office, Bureau of Land Management (BLM), rejected four coal preference right lease applications (PRLAs) on October 20, 2005, that had been submitted by Thermal Energy Company (Thermal). Thermal appealed that decision, which the Board docketed as IBLA 2006-71 and on November 19, 2010, referred it for disposition to the Hearings Division, Office of Hearings and Appeals. By decision dated June 13, 2011, Administrative Law Judge (ALJ) James Heffernan affirmed BLM's decision to reject these PRLAs because he found Thermal had failed adequately to demonstrate that they contain commercial quantities of coal. Thermal here appeals from his decision.

*BACKGROUND*

BLM issued coal prospecting permits under the Mineral Leasing Act of 1920 (MLA), 30 U.S.C. § 201(b) (1970), which were serialized as NMNM 8128, NMNM 8130, and NMNM 11670,[1] assigned to Thermal,[2] and extended by BLM in 1971.[3] Thermal requested issuance of preference right coal leases for these lands in

[1] BLM issued prospecting permits NMNM 8128 and NMNM 8130 in 1969 for lands respectively located in secs. 8-10, 15, 17, 22, 25-27, 34, and 35, T. 21 N., R. 8 W., New Mexico Principal Meridian (NMPM), and secs. 5-8, T. 20 N., R. 7 W., and secs. 1-3 and 12, T. 20 N., R. 8 W., NMPM; prospecting permit NMNM 11670 was issued in September 1970 for lands in secs. 7, 17, and 18, T. 21 N., R. 8 W., NMPM.

[2] Although a 50-percent interest in these prospecting permits and PRLAs was assigned to Peabody Coal Company, it was devised back to Thermal in May 1988.

[3] The MLA provided that 2-year prospecting permits could be issued (and extended if necessary) to determine whether a workable coal deposit exists in the lands encompassed by such permits, and if the permittee then "shows to the Secretary that the land contains coal in commercial quantities, the permittee shall be entitled to a lease." 30 U.S.C. § 201(b) (1970). A "workability" standard was applied for awarding leases to prospecting permittees for over 50 years until the Department amended its rules in 1976 to incorporate economics into its determinations of "commercial quantities" under the MLA. *Jesse H. Knight*, 155 IBLA 104, 107-08 (2001) (quoting 43 C.F.R. § 3520.1-1 (1976)). The authority to issue prospecting permits and leases to permittees was later repealed, subject to "valid existing rights." *Id.* at 109 (citing the Federal Coal Leasing Amendments Act of 1976, P.L. No. 94-377, 90 Stat. 1083 (1976)). Current MLA rules found at 43 C.F.R. Subpart 3430 (Preference Right Leases) are fully applicable to the Department's disposition and

(continued...)

January 1972, but BLM amended its MLA rules while these requests were under review. *See* 41 Fed. Reg. 18845 (May 7, 1976); 44 Fed. Reg. 42584 (July 19, 1979); 47 Fed. Reg. 33143 (July 30, 1982); 52 Fed. Reg. 25794 (July 8, 1987). Thermal submitted additional information to satisfy these new requirements in 1977 and 1980,[4] made a Final Showing in 1988 that it had discovered commercial quantities of coal in the lands included in its request for preference right coal leases, and filed a revised Final Showing on October 16, 1989, which responded to a BLM notice of deficiencies.

Thermal's revised Final Showing relied largely on a report by an engineering firm, Pincock, Allen, and Holt (PAH), dated October 13, 1989 (PAH Report), which estimated there were 62,893,300 tons of mineable reserves under its prospecting permits, plus 24,381,300 tons under a trio of adjoining state leases, that could all be mined to a depth of 150 feet. PAH Report at 2.5, 3.2. It projected that 69 million tons would be sold to a 1,000 megawatt mine-mouth power plant over a 20-year period, as envisioned by Thermal,[5] but that it would be necessary to continue mining thereafter as that power plant would have been fully operational for only 14 years and have considerable remaining useful life. *Id.* at 4.2, 4.4, 6.1. PAH estimated the cost to purchase mining equipment, to construct mining facilities, an access road from Pueblo Pintado, haul roads to the mine-mouth power plant site,[6] wells and a delivery system for supplying the mine with 12,000 gallons of potable water per day

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[3] (...continued)
adjudication of the PRLAs here at issue. *See* 43 C.F.R. § 3430.0-7 ("these regulations apply only to preference right lease applications based on prospecting permits issued prior to August 4, 1976").

[4] The PRLAs and these additional submissions were reviewed by the U.S. Geological Survey (USGS) in 1972, 1977, and 1981 and found to meet then-applicable requirements.

[5] PAH did not evaluate the cost or profitability for constructing a mine-mouth power plant but noted "[d]iscussions are under way between Thermal and several . . . utilities on this project" and that Thermal had received an "in depth analysis of the technical and economic feasibility" of such a plant, which reportedly concluded, "with typical financing and with a rate of return on equity sufficient to attract investor capital, the price of power delivered to the load centers will be competitive and will strengthen reliability of the participating utilities." PAH Report at 6.35, 6.36.

[6] As these roads would be constructed by employees and equipment from the mine, they were treated as "operating costs" and apparently included as a preproduction operating cost of the mine. PAH Report at 6.13; *see id.* at 6.4, 6.8, 6.14.

(50 gallons per worker), and for environmental compliance costs (*e.g.*, baseline studies, regulatory compliance, and to relocate families on the lands to be mined). *See id.* at 4.4 to 4.5, 5.1 to 6.34. Based on these costs and an assumed average sale price of $21.50 per ton to a mine-mouth power plant, PAH projected an internal rate of return for mining this coal deposit at 35.8 percent. *Id.* at 7.1.

The BLM Albuquerque District Office and Farmington Resource Area Office reviewed the PRLAs and Thermal's Final Showing, identified deficiencies, and while they specified information to be requested of Thermal, the New Mexico State Office rejected the PRLAs by decisions dated November 5, 1992, and March 23, 1993, which Thermal appealed and were decided in *Thermal Energy Co. (Thermal I)*, 135 IBLA 291 (1996), and *Thermal Energy Co. (Thermal II)*, 135 IBLA 325 (1996).[7] The Board set these decisions aside because we concluded that 43 C.F.R. § 3430.4-2(a) required BLM to request additional information so as to have "all the information it needs to determine whether or not a prudent person would expend further time and means to develop a mine." *Thermal I*, 135 IBLA at 320, 321-22; *see Thermal II*, 135 IBLA at 331, 335 (BLM not prevented from considering post-permit data that may corroborate data obtained during the permit term). *Thermal I* held "an applicant must submit sufficient information to show a reasonable factual basis that commercial quantities of coal exist in the area of the lease applied for," adding that an "assumption, without supporting evidence, is not 'a reasonable factual basis'" and then explaining:

> [I]f Thermal is depending on construction of a mine-mouth power plant by a third party to show that its coal is marketable, then evidence that there is a reasonable prospect such a plant would be profitable using the product purchased from the mine at the rate and purchase price stated by the permittee would be required in order for Thermal to "support . . . the assertion that commercial quantities of coal have been found."

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[7] BLM's decision in *Thermal I* was based, at least in part, on its finding:

> There is no rationale provided to substantiate the existence of a mine mouth power plant or the future construction of one. There is also no discussion as to the location and type of expected purchasers of the coal or the expected use of the coal. Without justification of the assertion that there is, or will be, a mine mouth power plant, there needs to be transportation and marketing costs included in the Final Showing.

135 IBLA at 300.

135 IBLA at 308, 316, 318; *see also id.* at 314-18. We there identified the types of additional information that BLM should require of Thermal, which included "the basis for the proposed mine mouth power plant market for the coal." 135 IBLA at 323. We remanded all four PRLAs to BLM "for action consistent with this decision." *Thermal I*, 135 IBLA at 323, 324; *see Thermal II*, 135 IBLA at 335.

BLM issued a new record of decision (ROD) on July 24, 1997, shortly after it responded to public comments and finalized its Cost Estimate Document. *See* 43 C.F.R. § 3430.4-2; 62 Fed. Reg. 10065 (Mar. 5, 1997). It found Thermal had discovered coal in commercial quantities and approved its PRLAs. The Navajo Nation appealed, arguing that this ROD was "not supported by substantial evidence and does not reflect reasoned decisionmaking" for reversing its earlier decision to reject these PRLAs. *The Navajo Nation*, 152 IBLA 227, 232 (2000). The Board agreed:

> Our concern with BLM's decision is that it leaves the Board pondering whether there is any valid basis on which BLM reached its conclusions. The decision itself is a near carbon copy of that provided to Ark Land Company granting its applications, and which the Board set aside in *The Navajo Nation*, 150 IBLA 83 (1999). As in *The Navajo Nation, supra*, there are no references in the decision to any hard factual data submitted by Thermal. There are no summations of any of the information of record. We are not presented with *any* detail of what BLM considered in reaching its conclusions, let alone what it considered significant, other than the environmental protection cost estimate document, which is not compared with any of Thermal's submitted costs. BLM's decision, on its face, leaves us with the question, how can BLM make a finding in favor of commercial quantities without providing more supporting data from the record? The ROD simply does not provide us with enough analysis to make a reasoned judgment concerning whether its decision is supported by a rational basis. *See Larry Brown & Associates*, 133 IBLA 202, 205 (1995).
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> We are also concerned that there is no evidence in the record that a mine-mouth power plant will be constructed, thus making the commercial quantities determination feasible, even if all other indicia supporting such a determination were present. Thermal has given no indication that it will construct the plant. The study commissioned by BLM suggests that such a plant is not likely to be constructed within the next 15 years. This is critical because the record establishes that the

> PRLA's are not serviced by road or rail permitting coal haulage to other markets.

152 IBLA at 233 (record cites omitted); *see id.* at 236 ("BLM has failed to satisfactorily address Appellant's claim that there is no basis to believe a mine-mouth power plant will be constructed, and BLM's own study refutes the feasibility of such a scheme"). We therefore set aside BLM's decision and remanded with direction that it squarely address "the basis on which it has determined Thermal can produce coal in commercial quantities from the PRLA's." *Id.*

On remand, BLM denied these PRLAs by its ROD dated October 20, 2005 (2005 ROD), which found Thermal had not shown a reasonable expectation that revenues would exceed its costs. Thermal appealed, and we referred the matter to the Hearings Division by Order dated September 24, 2008. *See* 43 C.F.R. § 3430.5-2(b) ("The applicant shall have the right to a hearing before an Administrative Law Judge if the applicant alleges that the facts in the [PRLAs] are sufficient to show entitlement to a lease.").

*THE EVIDENTIARY HEARING BEFORE ALJ HEFFERNAN*

ALJ Heffernan heard evidence over a 7-day period. Thermal presented two witnesses and multiple documents to meet both its burden "of going forward" and of proof "by a preponderance of evidence." 43 C.F.R. § 3430.5-2(c). BLM and The Navajo Nation countered with 14 witnesses and additional documentary evidence. We briefly describe that evidence [8] before addressing ALJ Heffernan's decision and the issues here raised on appeal.

*I. Evidence Presented by Thermal to Meet its Regulatory Burdens*

**Ralph Barbaro** holds a Ph.D. in mining engineering and operations research and was retained by Thermal to review documents and assess the commercial viability of its proposed project. Tr. 52, 58, 60-61. He reviewed the 1989 PAH Report and 2005 ROD, assessed mining costs, considered the economics of selling Thermal coal to either a future mine-mouth power plant near the applied-for lands or an existing power plant in the Southwest, and concluded that both presented a reasonable prospect for successfully developing a profitable mine. Tr. 31, 61, 62.

[8] ALJ Heffernan extensively described the evidence presented. *See* ALJ Decision at 9-26. Since we find the record shows his description is fair, accurate, and even-handed, we incorporate by reference his far more extensive summary, only briefly summarizing it here.

Barbaro assumed the mine would produce 77,202,000 tons over a 20-year period and calculated that this coal could be sold for $16.70 per ton, which would result in a 15-percent rate of return to the mine ($57,910,000). Tr. 73-76; *see* Ex. 95-A at 4.[9] Even after selling more than 77 million tons to a mine-mouth power plant over 20 years, he estimated remaining coal reserves at more than 55 million tons. Tr. 85-87. Barbaro testified that power from such a plant could be sent to Albuquerque over an existing transmission line, which is roughly 8 miles from the PRLAs, and that several utilities would be interested in purchasing that power due to a growing demand for power in the region. Tr. 87-88. He postulated that an investor-owned, state-regulated mine-mouth power plant could be willing to pay $38.24 per ton for coal from this deposit. Tr. 77, 79; Exs. 85, 87-A, 88.

As to the alternative of selling this coal to an existing power plant, Barbaro considered operations at the El Paso Electric Company and seven coal-fired power plants in Arizona and New Mexico that might purchase this coal. Tr. 31, 65, 67; *see* Ex. 86. Barbaro calculated its delivered price at $38.24 per ton (2010 dollars) and assumed Thermal coal could be sold to the Apache power plant for $32.17 per ton (plus transportation costs), which would represent a 113 percent return on equity. Tr. 69; *see* Ex. 87-A. He concluded this coal could be delivered by rail at a competitive price, even if the cost of a 29-mile rail spur were borne by Thermal. Tr. 92-94; *see* Ex. 91. He also challenged BLM and Navajo Nation expert reports, claiming they underestimated the value of these coal reserves and overestimated their mining costs. Tr. 97, 112.

**E.B. LaRue**, the founder of and a managing joint venturer in Thermal, stated that while he has never personally participated in any aspect of a working coal mine or a power plant, he had studied everything he could find on these subjects and engaged outside engineers and consultants with respect to these PRLAs. Tr. 492-94, 513, 529, 562. He asserted he is a prudent person and that there is a reasonable prospect of success for developing a valuable mine on the applied-for lands by selling coal either to his envisioned mine-mouth power plant or an existing plant. Tr. 509, 512-13; *see* Ex. 17. LaRue explained that his mining costs and calculated selling price of $34.00 to $37.57 per ton were derived by adjusting estimates in the 1989 PAH Report by the Consumer Price Index (CPI), which he estimated would result in a return on equity to Thermal of 34%. *See* Tr. 514-15, 517; Ex. 17,

[9] This and multiple other spreadsheets prepared by Barbaro were offered to corroborate his conclusions by showing positive returns to the mine of 5, 10, 15, and 20 percent. Tr. 64-65; *see* Exs. 87-A, 88, 89, 90-A, 91, 92, 93-A, 94-A, 95-A, 96-A, 97-A, 98-A, 99-A, 100-A, 101-A, 102-A, 103-A, 105 (Barbaro Spreadsheets).

Table 6-23. In the absence of a mine-mouth plant, he estimated it would cost between $90 million and $100 million to construct a rail spur to transport Thermal coal to market. Tr. 519-23. If granted these leases, Thermal's next step would be to negotiate with companies to mine and produce power on its applied-for lands. Tr. 525.

*II. Evidence Presented by BLM and The Navajo Nation*

**Powell King**, a mining engineer with the New Mexico State Office who had assessed the PRLAs for the 2005 ROD, explained that BLM's decision to reject them was based primarily on Thermal's inflated coal sale price and assumption, without a reasonable factual foundation, that a mine-mouth power plant could be built. Tr. 673-74, 677, 689-95, 733. Guided by 43 C.F.R. Part 3430, BLM Manual 3430, *Preference Right Leases*, BLM Manual H-3430-1, *Procedures for Processing Coal Preference Right Lease Applications*, and BLM Manual H-3070-1, *Economic Evaluation of Coal Properties*, he updated cost and price data for the hearing, and based on that update, King testified that Thermal had failed to demonstrate a discovery of commercial quantities of coal on its applied-for lands. Tr. 678-79, 695-97; *see* Exs. D, E, F, M.

King researched regional power plants as potential purchasers of Thermal coal and found only one that would pay a sufficiently high price for Thermal to derive even a 10-percent rate of return from mining its coal, but that plant does not have sufficient capacity to accept all the coal Thermal would need to produce, and even if it could, this coal would have to be processed due to its unacceptably high ash content. Tr. 697-98, 700; *see* Ex. M. He calculated that shipping Thermal coal to other area power plants would not be commercially viable, adding that obtaining a railway right-of-way and access to the mine and a mine-mouth power plant was unlikely and would be difficult due to local opposition. Tr. 694-95, 700-12. King was unable to find any interest in constructing another mine-mouth power plant in the Region and observed it would be difficult for such a plant to obtain necessary environmental permits. Tr. 692-93.

Other Department employees testified that Thermal had failed to include relevant cost considerations or adequately address federal environmental compliance requirements for its proposed project. **James Ration**, a Realty Specialist, Bureau of Indian Affairs (BIA), testified that native allottees, who own a portion of the surface estate overlying the lands to be mined, have concerns that were unaddressed by Thermal. Tr. 774. **Sampson Sloan**, a BIA Road Maintenance Supervisor, testified that while there are some sporadically maintained dirt roads in the area, no serviceable roads or other transportation infrastructure currently exists and that the

local Chapter of The Navajo Nation has long opposed and continues to oppose mining in the area. Tr. 801, 807. **Megan Stouffer**, Planning and Environmental Coordinator, New Mexico State Office, stated that Thermal failed to address significant planning and environmental costs associated with its proposed project, including the need for a full Environmental Impact Statement that would take 3 to 5 years to prepare and could cost $6 million. Tr. 816, 821-22. She also expressed concern nearby Areas of Critical Environmental Concern, Wilderness Study Areas, and areas containing cultural and archeology resources would require more intensive management by BLM and questions the environmental compliance costs identified in Thermal's planning and environmental documents. Tr. 824-28. Two BLM biologists, **Greg Gustina** and **John Kendall**, stated that Thermal's proposed project posed substantial negative environmental, biological, and wildlife impacts that would require mitigation at a substantial expense, adding that it had not considered or addressed two endangered fish species, bald eagles, golden eagles, ferruginous hawks, burrowing owls, and mountain plovers in the area, which would require consultation with the Fish and Wildlife Service (FWS) under Section 7 of the Endangered Species Act, 16 U.S.C. § 1536 (2006). Tr. 1117-45, 1156-69.

BLM's final witness was **Alan K. Stagg**, who is president of Stagg Resource Consultants, Inc., a registered professional geologist in 14 states and an expert in mining operations, mining economics, mine appraisal, mine valuation, transportation and marketing, geology, and coal market studies, was retained by BLM to assess independently Thermal's Final Showing and prepare a written report on his findings and conclusions. Tr. 843, 859, 860, 865; *see* Ex. S (Stagg Report). Stagg found no support for a mine-mouth power plant, observed a downward trend in the U.S. coal market, forecasted a maximum price for Thermal coal at $20.00 per ton, and estimated that a rail spur would cost Thermal $79.5 million. Tr. 934, 935, 942, 946, 948, 956, 969; *see* Ex. S. Using LaRue's drilling logs and data [10] and the 1989 PAH Report to update mining costs and selling prices, Stagg concluded that commercial quantities of coal do not exist on lands encompassed by these PRLAs. Tr. 865, 869, 871, 919-26, 976, 978; *see* Ex. S.

The Navajo Nation's first witness, **Alan S. Downer**, holds a Ph.D. in archeology and is the Manager of The Navajo Nation Historic Preservation Department and its Historic Preservation Officer. He testified that Thermal grossly

[10] Stagg discussed measured, indicated, and inferred coal reserves and expressed concern with the accuracy of Thermal's reported stripping ratio and coal seam thicknesses, and the likelihood of anticipated reserves being located deeper than 150 feet, as relied on and stated by Barbaro. Tr. 880-81, 884, 887, 890, 903, 906-07.

underestimated the cost of archaeological studies and mitigation. Tr. 423, 429-30, 457. Downer discussed aspects of the National Historic Preservation Act, 16 U.S.C. §§ 470 - 470w-6 (2006), and requirements for consultations with The Navajo Nation before undertaking any action that could impact native historic sites. Tr. 425-28. He opined that two-thirds of an estimated 221 historic/archaeological sites on the applied-for lands would need to be tested, with one-third requiring data recovery and mitigation. Tr. 459. Downer estimated the total for studies and mitigation would be roughly $44 million (*i.e.*, 10 times Thermal's updated estimate). Tr. 457-60. **Mark Leutbecker**, a consulting historian, discussed The Navajo Nation's unextinguished aboriginal occupancy rights in the area and concluded that Thermal had not considered the cost for addressing and resolving their competing rights. Tr. 1051, 1065, 1083.

**Louis Denetsosie**, Attorney General for The Navajo Nation, addressed the challenges and costs of relocating families for the Thermal project, The Navajo Nation's unsuccessful attempts to develop coal-fired power plants, and its long-standing opposition to new rail lines in the area.[11] Tr. 1180, 1189-93, 1205, 1217-18, 1228. Since Indian allottees cannot be forced to relocate, he stated Thermal would have to negotiate and provide them with substitute lands for continued grazing of their livestock and account for those costs. Tr. 1192. Denetsosie explained the "checkerboard" pattern of land ownership (*i.e.*, the intermixture of Federal, State trust, Indian trust, and Indian allotted lands with private and withdrawn lands), and using the abandoned Star Lake Railroad project that involved both LaRue and The Navajo Nation as an example, he described how this pattern would make obtaining the right-of-way for a rail spur time-consuming and potentially very expensive.[12] Tr. 1193-94. He testified that several chapters of The Navajo Nation had passed resolutions opposing Thermal's project, and if coal were removed from lands within The Navajo Nation, it would be subject to its business activities tax of between 4 and 8 percent. Tr. 1213-14.

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[11] As Chairman of The Navajo Nation Oil and Gas Company, before becoming The Navajo Nation's Attorney General, Denetsosie participated in and supervised the legals aspects of a proposed power plant and mine complex in the Eastern Navajo Agency, which included the involuntary relocation of allottees from that area. Tr. 1185-88.

[12] Denetsosie also reviewed an El Paso Natural Gas Company pipeline right-of-way to demonstrate the significance of tribal consent and substantial costs needed to obtain a right-of-way over Indian trust and allotment lands and a settlement agreement with Thermal that recognized the surface ownership rights of individual Indian allottees. Tr. 1199-1211.

**Lemont Yazzie**, a registered land surveyor and geographic information system (GIS) analyst employed by The Navajo Department of Transportation to maintain The Navajo Indian Reservation Road inventory, testified that roads in the area are unpaved, narrow, and subject to flash floods (except for Route 9). Tr. 1252-54, 1261-62, 1273. He used digitized maps to show possible rail routes to the mine but noted their likely grade would be 15 percent, whereas the maximum practical grade for a rail spur is typically 8 percent or less. Tr. 1276, 1278-82, 1283; *see* Exs. 100, 101.

**Larry Rodgers**, Executive Director of the Eastern Navajo Land Commission, testified that members of The Navajo Nation who have historically used the lands to be mined would be forced to relocate at an added cost to Thermal. Tr. 1301, 1313, 1317. He also discussed the status of the lands adjacent to the PRLAs, stating their customary use (*e.g.*, grazing) would pose serious, potentially expensive impediments to perfecting access to a mine and mine-mouth power plant. Tr. 1323, 1329, 1336.

**John Leeper** holds a Ph.D. in civil engineering, currently works for The Navajo Nation Department of Water Resources, and has experience with water required for coal mines and power plants in the Four Corners region. He expressed concern that water supply issues had not been adequately addressed by Thermal and stated it was implausible to suggest that adequate water could be supplied to this project for only $200,000. Tr. 1385-86, 1397, 1399, 1401. Leeper noted that the PAH Report did not include impairment and industrial use fees for using water from an aquifer owned by The Navajo Nation or identify the amount of water needed for dust suppression, coal washing and reclamation at the mine, or for operating a mine-mouth power plant. Tr. 1403-05, 1409. He testified there is insufficient groundwater in the area for a 4-million ton per year coal mine, much less the added water needed for a mine-mouth power plant. Tr. 1418.

**Mark Berkman**, who holds a PhD and is an economist that focuses on energy and the environment, testified that Thermal's market analysis and pricing are deficient. Tr. 1435-1461. He reviewed the PAH Report, the Barbaro Spreadsheets, and the Stagg Report, assessed transmission capacity available in the area, and researched the prospects for a new coal mine and/or coal-fired power plant in Arizona and New Mexico. Berkman found no evidence of a demand for either the coal to be produced or the power that could be generated by a mine-mouth power plant now or in the proximate future and that competition from cleaner, less costly gas-fired power plants and environmental regulations made it harder and more expensive to build and operate a coal-fired power plant than a gas-fired plant. Tr. 1460-63, 1466-68, 1486-87. He considered Barbaro's assessment of a mine-mouth power plant to be a best-case scenario that would necessarily fail because of

its high cost to build and operate. Tr. 1470-71. He stated that constructing a rail spur would be very expensive and highly speculative due to local opposition to granting a right-of-way across Navajo Nation lands. Leeper further stated that the quality of Thermal coal would present marketing challenges due to its high ash content and low BTU value relative to existing mines that have excess capacity and better locations. Tr. 1471-72, 1473-74, 1546-47.[13] Berkman candidly opined: "[I]t's possible that revenues could exceed costs, but I don't see any prospects that the revenues would be sufficient to return an attractive return on investment, at, say, a ten percent target." Tr. 1571.

*EVALUATION OF THE EVIDENCE AND DECISION BY ALJ HEFFERNAN*

Following extensive post-hearing briefing, ALJ Heffernan affirmed BLM's decision to reject these PRLAs because he found Thermal had not presented a "reasonable factual basis," supported by "hard factual data," to show they contain commercial quantities of coal. ALJ Decision at 28 (quoting *Thermal I*, 135 IBLA at 316, and *Navajo Nation,* 152 IBLA at 233). He there explained:

> With respect to a mine-mouth power plant, this requires evidence in the record that such a plant might actually be constructed, thereby making a commercial quantities determination a realistic potential. . . . LaRue's assumptions that either a mine-mouth power plant would be built, or in the alternative, that a rail spur would be built to transport the coal to other regional power plants, are simply too speculative in content to sustain granting the PRLAs. . . . Thermal's assumptions that either a mine-mouth power plant or a rail spur would ever realistically be built constitute mere "possibilities of the future" with variables not "susceptible to reasonable predictability." *United States v. Winegar*, 16 IBLA 112, 126 (1974).

[13] Berkman explained the competitive driver for coal prices is the marginal cost of production by mines with excess capacity, as they could profitably drop their price to compete with any new producer. Tr. 1547. While Barbaro and Stagg identified coal prices based on historical data, Berkman anticipates excess production and reduced demand in the area, which would curtail future coal price increases. Tr. 1550-54.

ALJ Decision at 28-29.[14] ALJ Heffernan found the failure of similar mine-mouth power projects due to market conditions and environmental issues were relevant to "whether Thermal has realistically demonstrated commercial quantities of coal." *Id.* at 29 (citing *Thermal I*, 135 IBLA at 316-17). Finding that Barbaro had not examined the contemporary cost for a rail spur and his spreadsheets left out a number of environmental compliance costs that "should have been included," ALJ Heffernan concluded that "Thermal failed to demonstrate a reasonable prospect of developing a valuable mine because the realistic total costs of developing, extracting, transporting and marketing the coal will exceed the likely coal revenues." *Id.* at 30. "Merely adjusting costs from the [PAH] Report for inflation, and not determining what the total contemporary environmental compliance costs would be, was insufficient to meet Thermal's burden of proof under the preview of 43 C.F.R. § 3430.4-4." *Id.*

ALJ Heffernan also found Thermal relied on a "number of unproven assumptions" (*e.g.*, the feasibility of a rail spur, "plentiful availability" of water, adequate capacity for transmitting power from a mine-mouth plant, and a market for Thermal coal at existing power plants). *Id.* at 31, 37. He also found the cost of access to the mine and a mine-mouth power plant were unaddressed, which "alone renders Thermal's cost-related case inadequate." *Id.* at 33; *see id.* at 34 (the failure to include the cost to comply with NEPA, "standing alone, provides an adequate legal basis to deny the PRLAs" under 43 C.F.R. 2430.5-1(c)). Throughout his discussion of the evidence presented, ALJ Heffernan weighed witness credibility, observing that Barbaro was "overly optimistic" and Berkman's testimony was "persuasive." ALJ Decision at 29, 31, 32, 36.

ALJ Heffernan concluded his decision by stating: "Based upon the foregoing discussion, my review of the administrative record, and my review of the verbatim hearing record, it is my factual and legal conclusion that, pursuant to the re-referral mandate of IBLA, Thermal has not proven a discovery of coal in commercial

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[14] He earlier found and explained:

> During the hearing, Thermal did not rebut the concern expressed by IBLA itself that such a plant is not likely to be constructed . . . ." [*Navajo Nation*, 152 IBLA at 233]. Indeed, Dr. Berkman's testimony proves that such a mine-mouth plant simply will not be constructed in the foreseeable future. Relatedly, the putative siting of Thermal's proposed mine and mine-mouth power plant will require the crossing of Navajo Nation lands for ingress and egress, and the overall record confirms that The Navajo Nation opposes the construction of such facilities.

ALJ Decision at 27-28 (record citations omitted).

quantities under the purview of 43 C.F.R. Sections 3430.1 and 3430.2." ALJ Decision at 37. He then made 10 enumerated "determinations"[15] and denied Thermal's PRLAs

[15] ALJ Heffernan made the following determinations:

> 1. Thermal's cost estimates fail to provide reasonable estimates for the substantial costs associated with obtaining surface ingress and egress rights from Individual Indian Allotment owners, as well as from The Navajo Nation, [which] fails to conform to the requirements of 43 C.F.R. [§] 3430.5-3(b).
> 2. Thermal failed to account for additional, contemporary environmental compliance and reclamation costs . . . , provide reasonable cost estimates for legally required additional NEPA documentation and, therefore, failed to comply with the provisions of 43 C.F.R. [§] 3430.5-1(c).
> 3. Thermal's estimates for the costs associated with siting a rail access spur or for improving the adjacent roads are unrealistic. . . . Thermal's cost and revenue assumptions fail to comply with 43 C.F.R. [§] 3430.1-2(b).
> 4. Thermal failed to demonstrate that there is now or will be in the foreseeable future sufficient ground water available on, or adjacent to, the PRLAs to meet Thermal's needs.
> 5. A mine-mouth power plant is not feasible now or in the foreseeable future because ingress and egress to the PRLAs would require Navajo Nation approval, which simply will not occur . . . .
> 6. The nearby electric transmission lines are unlikely to have sufficient capacity in the future to take Thermal power, even if they could be physically reached by acquiring necessary access rights-of-way.
> 7. The "inferred" category of Thermal coal reserves . . . [was] speculative and . . . failed to comply with [43 C.F.R. § 3430.1-2(a)].
> 8. The regional electrical utilities that would purchase Thermal coal in the absence of a mine-mouth power plant, have, in fact, abandoned plans to build new coal-fired power plants [and] national forecasts by the Energy Information Administration, Department of Energy, indicate no substantial growth in demand for coal-fired electrical generation, thereby proving that there will not be reasonable markets for Thermal coal at both the regional and national levels.
> 9. The marginal costs of competing regional mines [and Thermal's costs prove] that the prospects of a successful mine are so sufficiently low that spending additional money on the PRLAs would not be justified.

(continued...)

by stating: "Because Thermal has failed to meet its burden of proof [and] to accurately estimate all applicable costs . . . , Thermal has failed to prove a reasonable probability for success of its proposed mining venture on the subject PRLAs. Consequently, Thermal has failed to prove the existence of commercial quantities of coal on the PRLAs, as defined by 43 C.F.R. 3430.4-4(a), (b), (c) and 3430.5-2(c)." *Id.* at 39. Thermal has timely appealed from that decision.

*DISCUSSION*

BLM rules require rejection of a PRLA if the applicant "fails to show that coal exists in commercial quantities on the applied for lands" and define commercial quantities in two respects. 43 C.F.R. § 3430.5-1(a)(1); *see* 43 C.F.R. § 3430.1-2 (Commercial quantities defined). The first requires that the deposit be one "a prudent person would be justified in further expenditure of his labor and means with a reasonable prospect of success in developing a valuable mine," and the second specifies:

> The applicant shall present sufficient evidence to show that there is a reasonable expectation that revenues from the sale of the coal shall exceed the cost of developing the mine and extracting, removing, transporting, and marketing the coal. The costs of development shall include the estimated costs of exercising environmental protection measures and suitably reclaiming the lands and complying with all applicable Federal and state laws and regulations.

43 C.F.R. § 3430.1-2(a), (b).[16] Thus, an applicant must submit "sufficient information to show a reasonable factual basis that commercial quantities of coal exist in the area of the lease applied for," but an "assumption, without supporting

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[15] (...continued)

10. Thermal did not prove any viable export market for its coal.

ALJ Decision at 37-39.

[16] When initially promulgating this rule, "the Department made clear it was adopting the prudent person test developed under the Mining law of 1872" and its complementary "marketability test." *Thermal I,* 135 IBLA at 315-16, 317 (citing *Yankee Gulch Joint Venture v. BLM*, 113 IBLA 106, 131 (1990)); *see Ark Land Company*, 168 IBLA 235, 246-47 (2006). Thus, as found by ALJ Heffernan, Barbaro and LaRue's confidence that these PRLAs could be developed, "standing alone, are not sufficient proof to pass the prudent person test." ALJ Decision at 28 (citing *United States v. Kent Bush*, 157 IBLA 359, 369-70 (2002)).

evidence, is not a 'reasonable factual basis.'" *Thermal I*, 135 IBLA at 308, 316. It is from this regulatory milieu that Thermal claims error in the rejection of its PRLAs.

Thermal contends ALJ Heffernan erred by requiring it to prove a "reasonable probability," rather than a "reasonable prospect," of success for its proposed mining venture, and by imposing an "impossible burden" on it to prove that its proposed project and each of its component parts will occur. Statement of Reasons (SOR)[17] at 17 (quoting ALJ Decision at 39 and 43 C.F.R. § 3430.1-2), 18, 22, 23, 26. While recognizing its project faces obstacles, Thermal claims it need not show they "will be" overcome, only that they "might" be overcome. SOR at 21, 22, 23, 24, 28. BLM and The Navajo Nation counter by claiming Thermal has misconstrued the burden of proof applied by ALJ Heffernan and arguing that he identified and properly applied the "reasonable prospect" standard in evaluating Thermal's evidence. BLM Answer at 10-11; Navajo Answer at 11-12. They assert the burden is not on them to prove this project (or any of its component parts) is impossible, as it would suffice if their evidence showed it is unlikely that a prudent person (or investor) would expend further effort on the proposed Thermal project with a reasonable prospect of success.

Thermal asserts it met its burden and here focuses on nine "determinations" made by ALJ Heffernan at the conclusion of his decision,[18] claiming they are not adequately supported by the record. SOR at 18-29. BLM and The Navajo Nation vigorously disagree, citing the record and ALJ Heffernan's discussion of that record to demonstrate he had an adequate basis for each of his determinations. *See, e.g.,* BLM Answer at 24 (the "dearth of reliable data was Thermal's own shortcoming; the attempt to pass that burden on [to BLM] is wholly misguided"), 26 ("Thermal failed to provide any specific detail regarding a potential market"), 27 ("armed with the knowledge of other, recent, failed power plant ventures in the area, [a prudent investor] would reject the proposed mine-mouth power plant"), 29 (the burden is not on "BLM to prove that commercial quantities of coal do not exist"); Navajo Answer at 11, 12 ("Thermal provided nothing [on ingress/egress costs]"), 14 ("it is Thermal's burden to provide estimates of [environmental] costs in a way that can be

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[17] BLM and The Navajo Nation responded to this SOR on Sept. 2, 2011 (BLM Answer; Navajo Answer); Thermal then replied to their Answers on Sept. 28, 2011.

[18] ALJ Heffernan summarized the evidence presented, made factual findings in his discussion of that evidence, and then made deteminations of law and fact in his conclusion. We therefore disagree with Thermal's characterization of his determinations as "findings of fact." In any event, it does not challenge his determining that no viable export market for its coal exists. *See* SOR at 29; *supra* note 15.

independently verified, not BLM's"), 15 ("Thermal may not properly shift its burden to estimate the cost of highway construction to the Government"), 16 (Thermal did not "provide any proper estimate of rail costs"), 25 ("Thermal has impermissibly created an artificial market for the PRLA coal by assuming that someone will build a [$3 billion] mine-mouth power plant"), 25-26 ("Thermal has no realistic possibility of selling the PRLA coal to any of the regional power plants").

As with any decision subject to Board's review, the ALJ's decision must have a rational basis. The burden is on Thermal to demonstrate an error of law, a material error in ALJ Heffernan's factual analysis, by a preponderance of the evidence, or that his decision is not supported by a record showing he gave due consideration to all relevant factors and based his decision on a rational connection to the facts he found. *See, e.g., Mark Patrick Heath*, 175 IBLA 167, 176 (2008), and cases cited; *The Houston Exploration Company*, 169 IBLA 166, 174 (2006); *United States v. Pass Minerals, Inc*., 168 IBLA 115, 149 (2006). This case presents two basic issues: Whether the proper legal standard was applied by ALJ Heffernan to evaluate the evidence, and if so, whether his denial of these PRLAs is adequately supported by that record. We separately address each of these issues below.

*I. ALJ Heffernan Applied the Proper Burden of Proof in Evaluating the Evidence Presented.*

[1] Applicable rules and precedent require a PRLA applicant to show "a reasonable prospect of success for developing a valuable mine" and a "reasonable expectation" that revenues will exceed costs based on "reasonable economic assumptions," "reasonable geologic projections," and/or a "reasonable factual basis." 43 C.F.R. §§ 3430.1-2, 3430.5-3; *Thermal I*, 135 IBLA at 308, 315 (quoting *Yankee Gulch*, 113 IBLA at 131). Where an application is rejected and a hearing is held, the burden of proof is on the applicant to show that commercial quantities of coal exist in the proposed lease area by a "preponderance of the evidence," which means evidence that "has more convincing force and produces in your minds belief that what is sought to be proved is more likely to be true than not true." *United States. v. Michael R. Mark Anthony*, 180 IBLA 308, 349-50 (2011) (quoting *United States v. Feezor,* 130 IBLA 146, 200 (1994)); *see* 43 C.F.R. § 3430.5-2(c). Thermal contends ALJ Heffernan applied the wrong burden of proof to its evidence because his decision concludes by stating that Thermal "failed to prove a reasonable probability for success of its proposed mining venture on the subject PRLAs," rather than more properly referring to its burden to show a "reasonable prospect of success." SOR at 17 (quoting ALJ Decision at 39 and 43 C.F.R. § 3430.1-2).

Our review of the ALJ Decision shows that when discussing the record and making findings of fact, ALJ Heffernan applied the proper burden of proof to the evidence presented. In fact, his sole reference to "a reasonable probability for success" was made in the decision's final paragraph, after finding Thermal "failed to meet its burden of proof" or "accurately estimate all applicable costs," and before stating that it "failed to prove the existence of commercial quantities of coal on the PRLAs." ALJ Decision at 39. We are unpersuaded that this single, allegedly erroneous reference vitiates the consistently correct statements and articulation of Thermal's burden of proof of proof throughout the ALJ Decision.

*II. The Hearing Record Adequately Supports Rejection of these PRLAs.*

The applicant for a preference right coal lease must show "a prudent person would be justified in the further expenditure of his labor and means with a reasonable prospect of success in developing a valuable mine," and must present "sufficient evidence" that its revenues will exceed the cost of developing a mine, implementing environmental measures, complying with applicable law and regulations, and for extracting, removing, transporting, and marketing the coal. 43 C.F.R. § 3430.1-2; *see Thermal I*, 135 IBLA at 316 (if an assumption is used, it must be supported by a "reasonable factual basis"). Thermal contends it met its burden and that ALJ Heffernan erred in ruling to the contrary, claiming the nine "determinations" made at the conclusion of his decision are not supported by the record. *See* SOR at 18-29 (citing ALJ Decision at 37-39). We disagree and for ease of analysis combine related claims into five categories that are separately addressed below.

*A. Cost to Acquire and Construct Access by Road and Rail*

The prospect of success for this proposed mining venture is expressly predicated on constructing either a new mine-mouth power plant or rail access to existing power plants. Thermal's Final Showing considered coal hauling and relocations costs within the proposed lease area, but not the costs of road or rail access (*e.g.*, to transport coal to other power plants) or to transmit power generated by a mine-mouth plant. ALJ Heffernan found such access "would likely be very substantial in dollar terms, and Thermal has not even proffered an estimate of those costs." ALJ Decision at 32. He also found "Dr. Barbaro did not examine the costs for a contemporary rail route in any additional detail," beyond "numbers provided by LaRue." *Id.* at 30; *see also id*. at 33 ("even if reasonable cost estimates had been proffered by Thermal, the testimony of Mr. Denetsosie strongly suggests that necessary individual Indian, as well as Navajo Nation, approvals for the Thermal project will never realistically be obtained, because of Tribal opposition at all levels,

including at the Chapter level"). His decision concludes by determining that Thermal failed to conform or comply with 43 C.F.R. §§ 3430.1-2(b) and 3430.5-3(b) because it relied on "unreasonable . . . assumptions for obtaining ingress and egress" and because its "estimates for the costs associated with siting a rail access spur or for improving the adjacent roads are unrealistic, inadequate and too low in dollar amount." ALJ Decision at 37 (Determination 1), 38 (Determination 3).

Appellant contends ALJ Heffernan erred in making these determinations because the cost for accessing the mine and a mine-mouth power plant were subsumed within its "more than adequate" environmental budget. SOR at 18 (citing Barbaro Declaration [19]); *see id.* at 18 ("nothing in the record demonstrates that Thermal's budget is unreasonable"), 21 ("no portion of [Berkman or Ration's testimony] provides any basis for asserting that these costs are unrealistic, inadequate or too low in dollar amount"). The burden was on Thermal to establish what these costs could be, not BLM or The Navajo Nation. Based on our review of the record, we find no error in how ALJ Heffernan evaluated the evidence or in his concluding that these costs were not adequately addressed by Thermal (if at all).[20] Nor do we find any substantial record evidence that Thermal either addressed the complex checkerboard pattern of surface ownership in the area or identified a potentially feasible route for a rail spur.[21] We conclude Thermal has failed to show error in either ALJ Heffernan's consideration of the evidence or his conclusions on acquiring and constructing access to the mine, a mine-mouth power plant, or for a rail spur.

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[19] The Barbaro Declaration asserts that the cost of obtaining rights of ingress and egress are buried in a category on his spreadsheets called "Environmental Compliance Cost." Even if that was his intent in preparing those spreadsheets, his Declaration provides no estimate of those costs. *See also* Tr. 242-43 (costs estimated by Barbaro were "pulled entirely" from the 1989 PAH Report).

[20] The Barbaro Declaration proffered on appeal provides no environmental cost estimate to show that Thermal's environmental budget would likely be adequate to cover the substantial cost of acquiring and constructing access by road and rail, plus the inflation-adjusted environmental costs identified in the 1989 PAH Report. Thermal's proffer is unavailing to cure the omissions identified by ALJ Heffernan.

[21] It is uncontroverted that the proposed lease area is served by neither rail nor adequate roads and that The Navajo Nation controls all viable access routes. We are unable to find where Thermal proffered a transportation cost estimate, showed those costs were affordable, or addressed access rights and costs, whereas we find substantial record support for ALJ Heffernan concluding that Thermal's approach to access was too conjectural and lacked a reasonable factual basis.

*B. Environmental Compliance Costs*

Environmental compliance costs identified in the PAH Report were adjusted for inflation by Barbaro, but ALJ Heffernan found "he did not analyze whether that Report covered all necessary, contemporary environmental components and related costs[,] which, today, should have been included in Thermal's cost analyses." ALJ Decision at 30. ALJ Heffernan then concluded: "Merely adjusting costs from the [PAH] Report for inflation, and not determining what the total, contemporary environmental compliance costs would be, was insufficient to meet Thermal's burden of proof under the purview of 43 C.F.R. 3430.4-4." ALJ Decision at 30. Rather than address its compliance with that rule, Thermal claims it was "entitled to rely" on determinations made in the 2005 ROD, "budgeted ample funds to address environmental issues," and concludes that ALJ Heffernan erred in determining otherwise. SOR at 19, 20; 2005 ROD at 12.

Thermal met its burden of "going forward" by relying on the 2005 ROD, which compared BLM's 1997 Cost Estimate Document with Thermal's 1989 Final Showing and found "applicant['']s estimated environmental costs are reasonable and adequate." 2005 ROD at 12; *see* 43 C.F.R. § 3430.5-2(c). However, BLM and The Navajo Nation were not precluded by rule or precedent from challenging Thermal's estimates at the hearing, and as The Navajo Nation correctly notes, "Thermal requested the plenary hearing and cannot now complain that the evidence on issues required to be satisfied to demonstrate commercial quantities under the regulations was either missing from its presentation or does not favor its position." Navajo Answer at 15.

The burden was on Thermal to show its estimate was reasonable and adequate by a preponderance of the evidence; ALJ Heffernan found it did not meet that burden, due largely to multiple witnesses identifying and testifying on omissions and other deficiencies in Thermal's environmental cost estimate. Since he also found Thermal's mine-mouth power plant or rail spur are major actions that would require supplementation of the San Juan Regional Coal Environmental Impact Statement (March 1984) and that Thermal "clearly cannot satisfy the commercial quantities test without preparing . . . a cost estimate document as described in [§§] 3430.3-2, 3430.4-3, and 3430.4-4," which it failed to do, he concluded that its PRLAs should be rejected. ALJ Decision at 34 (quoting 43 C.F.R. § 3430.5-1(c)). Based on our review of the record, we find no error in his weighing of the evidence or factual findings [22]

[22] We note that Thermal did not proffer a comprehensive summary of current environmental costs, as required by 43 C.F.R. § 3430.4-4, or verify that its budget (continued...)

and are unpersuaded he erred in determining that these PRLAs are properly rejected for Thermal's failure to present an adequate estimate to complying with all applicable environmental laws and regulations. *See* ALJ Decision at 37-38 (Determination 2).

*C. Availability and Cost of Adequate Water (if available)*

PAH addressed water availability and estimated that 12,000 gallons of potable water could be supplied to 250 mine employees from two water wells at an estimated cost of $200,000, but it did not quantify or provide a cost estimate of water needed for dust suppression, reclamation, washing coal, or operating a mine-mouth power plant. *See* PAH Report at 4.5, 5.2 ("Many geologic formations are known to yield water to wells somewhere in the basin[, but] most yields are low and the quality of the water generally is poor."). LaRue addressed this lacuna by relying on a USGS paper entitled *Ground-Water Resources of the Southern Part of Jicarilla Apache Indian Reservation and Adjacent Areas* and then stated "there is ample water for coal mining almost anywhere in the south end of the San Juan Basin where this coal is located." SOR at 22 (citing Tr. 555-59; quoting Water Supply Paper 1576-H, Hearing Ex. 25). Leeper countered, based on his knowledge and experience, "there will not be sufficient groundwater available to the PRLAs to meet the needs of a surface coal mine producing some four million tons of coal per year, nor for the proposed mine-mouth power plant" and that Thermal could not develop an adequate water supply "for only $200,000." ALJ Decision at 22 (citing Tr. 1400-01, 1418). ALJ Heffernan considered LaRue's testimony to be an unproven assumption "given contemporary water-related demographics in the region, as confirmed by the testimony of Dr. Leeper." *Id.* at 18. He then determined that "Thermal failed to demonstrate that there is now or will be in the foreseeable future sufficient ground water available on, or adjacent to, the PRLAs to meet Thermal's need for dust abatement, irrigation for reclamation, for washing coal, or for a mine-mouth power plant." *Id.* at 38 (Determination 4); *see id.* at 31 ("assumptions with respect to the availability of water were proven by The Navajo Nation to be unreasonable and unsupported in the administrative record").

Thermal claims LaRue's testimony was sufficient to show adequate water "might" be available and that Leeper's testimony was speculative and lacked a factual basis because he had not analyzed "how much water Thermal will need for its mine and proposed mine mouth power plant." SOR at 21, 23. Reliance by LaRue on the

[22] (...continued)
would likely be sufficient for all environmental reports and data collection required by law or rule, consultations, mitigation measures, and compliance (*e.g.*, new rules and concerns not present when the PAH Report was prepared in 1989).

USGS paper was adequate to meet Thermal's burden of "going forward," but after receiving credible testimony from Leeper, the burden was clearly on Thermal to preponderate in showing an adequate supply of water is likely available in the area. ALJ Heffernan concluded it did not meet that burden. We are unpersuaded he erred in reaching that conclusion based on our review of the record.

Where water is essential to a mining venture and potentially very costly in the semi-arid Southwest, a prudent person (or investor) would require substantially more than a broad-scale government report before deciding to expend further resources with a reasonable expectation of developing a profitable mine on the lands here applied for. *See United States v. Osborne*, 28 IBLA 13, 25, 33-35 (1976), *aff'd sub nom. Bradford Mining Corp. v. Andrus*, Civ. No. LV-77-218 (D. Nev. Mar. 15, 1979). While it is true that Leeper did not calculate how much water Thermal's proposed mine and power plant would need and consume, he stated that sustainable groundwater in the area was extremely limited and, based on his experience with similar coal projects and power plants, opined that it would likely require at least 2,500 acre-feet per year and that Thermal's estimated cost for water ($200,000) was grossly understated. Tr. 1407, 1410-12, 1414-18, 1426. Nothing in the record rebuts his testimony, which we find provides added support for ALJ Heffernan's finding that "Barbaro's spread sheets did not constitute a full contemporary, cost assessment of the proposed mining venture." ALJ Decision at 30. We conclude Thermal did not meet its burden of proof regarding water availability and cost (if available) and, therefore, affirm the ALJ Decision in that regard.

*D. Prospects for Constructing a Mine-Mouth Power Plant*

We earlier stated that if this mining venture is dependent on a mine-mouth power plant, Thermal must present evidence showing "a reasonable prospect such a plant would be profitable" and be constructed. *Thermal I*, 135 IBLA at 318. While a commitment to build was not required, we recognized other evidence could be adequate to show a reasonable prospect for building a mine-mouth power plant (*e.g.*, testimony by a prospective coal purchaser or other market participant that it was interested in doing so). *See id.* at 314-17 (citing *United States v. Foresyth*, 100 IBLA 185, 228-43 (1987)). Although BLM determined on remand that continuing interest in building coal-fired power plants in the Four Corners Region (*e.g.*, two proposed plants with pending permit applications) was adequate to show "the possibility of a plant being built within the PRLA area," we set that determination aside because a BLM study indicated "such a plant is not likely to be constructed within the next 15 years," which refuted its "feasibility." *Navajo Nation*, 152 IBLA at 231, 233, 236; *see* ALJ Decision at 27. Thus the burden was on Thermal to show that its mine-mouth power plant is a realistic possibility supported by a reasonable factual basis.

The PAH Report stated that the mine-mouth power plant envisioned by Thermal would require 69 million tons of coal over 20 years and an additional 4 million tons per year over its remaining useful life, estimated mineable reserves to a depth of 150 feet at roughly 62.9 million tons under the applied-for leases and an additional 24.4 million tons under state leases that were subsequently relinquished by Thermal. The PAH Report assumed adequate availability of water, an ability to deliver power to customers via a transmission line capable of accepting that power, and a price for delivered coal to that plant of $21.50 per ton (1989 dollars) to project an internal rate of return to the mine at 35.8%. *See* PAH Report at 3.3, 4.2 through 4.4, 7.0. PAH did not consider the cost and profitability of a mine-mouth power plant or whether access to it and a transmission line could be acquired and, if so, at what cost.

ALJ Heffernan weighed the evidence, accepted the PAH Report reserve estimate of 63 million tons, rejected LaRue's estimate that its applied-for leases contain 120 million tons of recoverable coal to a depth of 210 feet as "unreliable and not properly proven," and determined that Barbaro's "overly optimistic" testimony that a mine-mouth power plant could be constructed was "persuasively rebutted by Dr. Berkman's economic, market-place analyses that assessed the actual competitive environment that Thermal would face." ALJ Decision at 29, 35-36. He found "Dr. Berkman's testimony proves that such a mine-mouth power plant simply will not be constructed in the foreseeable future" because he demonstrated there was "no viable, potential market for the power that would be generated by a mine-mouth power plant, as a result of the costs of that technology and the prices that would have to be charged upon completion of a mine-mouth plant" and that both Berkman and King testified that other coal projects in the area had failed due to environmental, economic, and market-place reasons (*e.g.*, a gas-fired power plant "would be a much preferable alternative" in terms of cost and environmental compliance). *Id.* at 27, 28, 29, 31-32. As to use of a nearby power transmission line, ALJ Heffernan found Thermal assumed, but did not prove, it was reasonable to expect access to that line could be acquired from The Navajo Nation and that this line would be capable of accommodating 1,000 megawatts (MW) of additional power from that power plant. *See id*. at 27-28, 37. ALJ Heffernan concluded by making four interrelated determinations:

- a "mine-mouth power plant is not feasible now or in the foreseeable future because ingress and egress to the PRLAs would require Navajo Nation approval, which simply will not occur" (Determination 5);
- "nearby electric transmission lines are unlikely to have sufficient capacity in the future to take Thermal power, even if they would be physically reached by acquiring necessary access right-of-way" (Determination 6);

- "reserve estimates of both Dr. Barbaro and Mr. LaRue in the absence of the state lease, were speculative" (Determination 7); and
- "regional electrical utilities that would purchase Thermal coal in the absence of a mine-mouth power plant have, in fact, abandoned plans to build new coal-fired power plants and National forecasts by the Energy Information Administration, Department of Energy [EIA], indicate no substantial growth in demand for coal-fired electrical generation" (Determination 8).

ALJ Decision at 38; *see supra* note 15.

Thermal contends ALJ Heffernan erred in determining a mine-mouth power plant is not feasible due to Navajo Nation opposition because it might support this plant in the future if it means good jobs and increased revenue. SOR at 24 (citing Tr. 1224-25 (Denetsosie)). But even if The Navajo Nation supported a mine-mouth power plant and granted it free access across Navajo Nation lands, this would not show a mine-mouth plant is a realistic possibility, only that one of several hurdles had been overcome. *See, e.g.,* Tr. at 1522-23 (Berkman) ("while it 'isn't impossible' for Thermal to gain access to the only existing line in the area, transmission constraints pose another obstacle to the mine-mouth power plant concept offered by Thermal."). Significantly, Thermal has not shown any current interest in pursuing a mine-mouth power plant in the Four Corners Region or that it is reasonable to expect such a plant could be constructed and operated at profit, whereas ALJ Heffernan found testimony by BLM and The Navajo Nation witnesses was persuasive in showing that no such plant would likely be constructed for the foreseeable future. *But see* SOR at 27-28 (the EIA forecasts "some additional" coal-fired power plant capacity may be added over the next 20 years).[23] Nor has Thermal persuasively demonstrated

[23] We note that national forecasts and estimates of increased coal use and capacity for producing power would be of little interest to, and given little weight by, a prudent person or investor considering whether to pursue a project that could cost upwards of $3 billion. We find merit in BLM's suggestion that a "prudent investor would also be intimately aware of the ever-constricting market for coal-fired power based on state-mandated Renewable Energy Portfolios and the influx of higher quality coal from the Powder River Basin." BLM Answer at 28 (citing Tr. 884-85, 950-51, 1463-65, 1473-74, 1486-87); *see* Navajo Answer at 20 (renewable energy portfolio standards "place coal-fired generation at a decided disadvantage") (citing Tr. 1485-93 (Berkman)). While it is not impossible that such a plant might be constructed in the Four Corners area (or elsewhere), the issue before ALJ Heffernan was whether there is a realistic possibility it could be located on or near the applied-for leases, an issue for which Thermal had the burden of proof and

(continued...)

that its applied-for leases contain sufficient coal reserves to operate its envisioned plant for even 20 years, much less through the end of its useful operating life, or that existing transmission lines are capable of accommodating an additional 1,000 MW of power, or if not, whether adequate capacity could be added to them and at what cost. *See* SOR at 24-26.

We have carefully reviewed the record and are unpersuaded that ALJ Heffernan erred in evaluating the evidence or making the four, above-identified determinations. Despite its confidence that a state-of-the-art power plant could be constructed and profitably operated, *see supra* note 17, we are unpersuaded that Thermal presented a reasonable factual basis for concluding that a prudent person (or investor) would expend the effort necessary in the foreseeable future to consider favorably pursuing a multi-billion dollar mine-mouth power plant with a reasonable prospect of success. *See* Tr. 340 (Barbaro), 1591 (Berkman). We agree with ALJ Heffernan's view that such a plant is not a realistic possibility, supported by a reasonable factual basis, for the foreseeable future. *See* ALJ Decision at 29.

*E. Market for Selling Thermal Coal at a Profit to an Existing Power Plant*

As an alternative to a mine-mouth power plant, Thermal suggested it might be able to sell its coal to other power plants at profit. Whether a prudent person would have a reasonable expectation for developing a profitable mine is dependent on anticipated revenues exceeding estimated costs. *See* 43 C.F.R. § 3430.1-2(b). Although Thermal failed to meet its burden by presenting a complete and current cost estimate for its proposed mining venture, which alone supports rejecting its PRLAs, we address the revenue side of that equation. Thermal need not have a coal purchase contract in hand to demonstrate what its revenues are expected to be, but it must present sufficient evidence and reasonable assumptions, supported by a reasonable factual basis, that show a prudent person would find its expectations reasonable. *See, e.g., Thermal I,* 135 IBLA at 308, 314-18; *Yankee Gulch Joint Venture v. BLM*, 113 IBLA at 131. So considered, Thermal was required to present sufficient evidence showing a market for its coal likely exists and the price at which it could or would likely be sold for in that market.

[23] (...continued)
persuasion, by a preponderance of the evidence.

The coal deposit underlying the PRLAs has a relatively high ash content and low BTU value and lacks a rail spur,[24] which placed it at a competitive disadvantage with other mines in the region that have "higher quality coal, established rail access, and previously sunk development costs." ALJ Decision at 32. ALJ Heffernan rejected Barbaro's projected price of $38 per ton because he found it was "proven by BLM and The Navajo Nation to be unreasonably high." *Id.* at 36. He noted that Stagg forecasted a price for Thermal coal of $20 per ton, that King found that only the Apache plant "would pay a high enough price to derive even a ten percent rate of return to Thermal," and that Berkman calculated that the Lee Ranch Mine could profitably produce and deliver coal "below Dr. Barbaro's calculated break even price of $23.71 per ton." *Id.* (citing Tr. 969-70, 997, 1554; Hearing Ex. 155 at 24, 41).[25] ALJ Heffernan found Berkman's testimony "persuasively proves that Thermal failed to provide sufficient evidence to show that there is a reasonable expectation that revenues from the sale of the coal shall exceed [its] cost." *Id.* (citing 43 C.F.R. § 3430.1-2(b)). Since the evidence showed Thermal's marginal costs would be roughly $5 per ton more than those of its likely competitors, he determined that Thermal coal is "uncompetitive" for sale to the Cholla or Springerville plants, "thereby proving that the prospects of a successful mine are so sufficiently low that spending additional money on the PRLAs would not be justified." *Id.* at 39 (citing Tr. 1541, 1549, 1554-55) (Determination 9); *see supra* note 25.

Appellant claims it is irrelevant whether Thermal coal is competitive with coal from other mines in the region, as all it was required to prove was "there is a *reasonable* expectation that a profitable mine *might* be developed." SOR at 29 (quoting *Ark Land*, 168 IBLA at 247). Thermal contends that burden was met through the testimony of Stagg, who agreed with Barbaro that the Springerville plant represents a "realistic potential" market for Thermal coal. *Id.* (citing Tr. 1029-30). It

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[24] The Navajo Nation asserts that Thermal coal is "the worst quality coal in the region" because its BTU value is lower than the lowest and its ash content is higher than the highest coal used by any power plant in the Four Corners Region, except for the Four Corners plants that accept comparably high ash content coal but to whom sales by Thermal would generate only a 0.2% rate of return. SOR at 22 (citing Tr. 157, 347-48 (Barbaro); Hearing Exs. 84, 87-A, R(E)).

[25] Berkman opined that the cost to produce one additional ton of coal at a competing mine (*i.e.*, its "marginal" cost) is a useful tool for determining ability to compete in an identified market. Tr. 1546-47. He reported that Thermal costs were $2.50 to $7.50 per ton higher than the comparable costs of at least two competitors in the region that have excess reserves and could profitably sell their coal below Thermal's "break even" price. Tr. 1554-55.

also disputes the weight given Berkman's testimony because he "did not even prepare any cash flow analysis of the proposed mine" and, according to Thermal, had "no basis to render an opinion on the issue of competitive costs or to critique the competitive costs developed by others." *Id.*

Whether a market is likely to exist into which Thermal coal might be profitably sold requires more than simply identifying a potential purchaser, it requires testimony by a putative purchaser or other indica that it might purchase this coal at a price that could result in a reasonable profit to Thermal. *See, e.g., Foresyth*, 100 IBLA at 228-34; *Jesse M. Taggart*, 53 IBLA 353, 357 (1981) ("where demand is limited . . . , a mining claimant must prove that willing consumers exist to whom the claimant could have reasonably expected to sell at a profit"). Appellant's seminal reliance on a market for selling its coal to the Springerville plant is particularly curious, as The Navajo Nation appropriately points out that LaRue earlier conceded that Thermal coal was not competitive for sale to that plant. Navajo Answer at 26 (citing Tr. 553 (LaRue)).[26] But even if it could be sold to that plant, Thermal has not shown a reasonable expectation, based on sufficient evidence and reasonable assumptions supported by a reasonable factual basis, that its coal could realistically be sold at a price that might result in reasonable profit to Thermal.

We are unconvinced that Berkman's testimony should be disregarded or discounted, as ALJ Heffernan had the benefit of observing his credibility and demeanor and clearly understood the meaning and import of his testimony in weighing the evidence presented. *See, e.g., United States v. Multiple Use, Inc.*, 120 IBLA 63, 76 (1991). Where, as here, the ALJ has demonstrated a keen understanding of the complex factual issues presented and the appellant has not "demonstrated clear error in [his] evaluation of the evidence (only a disagreement on its import)," we will not substitute our weighing of the evidence for his. *IMC Kalium Carlsbad, Inc.*, 170 IBLA 23, 39-40 (2006), appeal filed *sub nom.*, *Potash Association of New Mexico v. DOI*, Civ. No. 1:06-CV-01190-MCA-ACT (D.N.M. Dec. 6, 2006), dismissed as premature without prejudice (Aug. 29, 2008).

[26] The Navajo Nation also summarizes, with detailed record references, the reasons why only the Springerville plant is even a potential purchaser of Thermal coal and every other coal-fired power plant in the Four Corners Region is not (*e.g.*, the Cholla plant's coal supply contract does not expire until December 2024). *See* Navajo Nation Answer at 26-27 (citing Tr. 158-62 (Barbaro), 553-54 (LaRue), 699, 741 (King), 949, 951-53, 954-55, 969-70 (Stagg), 1471-74 (Berkman); Hearing Exs. 87-A, 91.

*Conclusion*

In sum, we agree with Judge Heffernan and conclude that Thermal failed to prove, by a preponderance of the evidence, a reasonable prospect of success for its proposed mining venture. Our review of the record confirms that Thermal did not comply with applicable rules by providing an appropriate level of detail and completeness in its cost estimates, present evidence showing a reasonable expectation a profitable mine might be developed based on sufficient evidence and reasonable assumptions supported by a reasonable factual basis, or show that a prudent person (or investor) would further pursue what appears to be a project costing well over $1 billion based on the record here presented.

Therefore, pursuant to the authority delegated to the Board of Land Appeals by the Secretary of the Interior, 43 C.F.R. § 4.1, the decision by ALJ Heffernan herein appealed from is affirmed.

/s/
James K. Jackson
Administrative Judge

I concur:

/s/
James F. Roberts
Administrative Judge