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The Regional Haze Settlement Agreement Is a Terrible Deal for New Mexico

State Should Continue to Fight EPA in Court

By William Yeatman*

After months of negotiation, the New Mexico Environment Department in early October proposed a settlement to end its dispute with the U.S. Environmental Protection Agency (EPA) over haze-causing emissions from the San Juan Generating Station, a 1,770-megawatt (MW) coal-fired power plant near Farmington. The proposal has won praise from many quarters, including advocates for low-income residents. Ratepayers, however, should be wary. This alternative settlement is even worse than the EPA's draconian regulation.

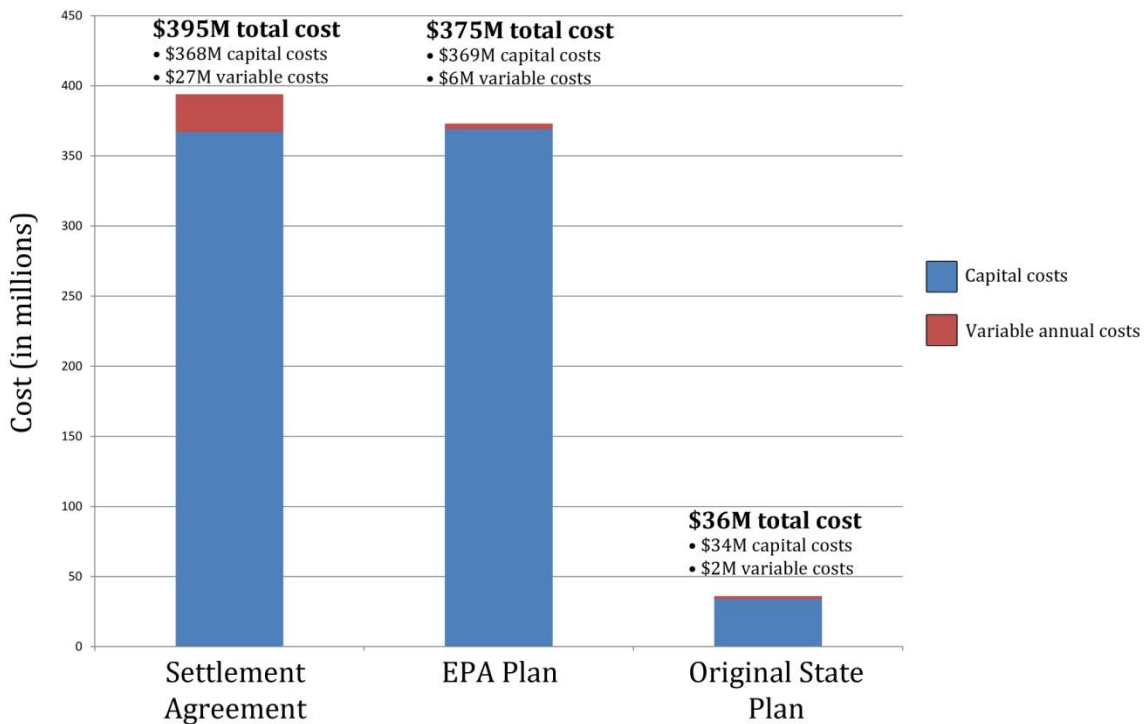
At issue is an EPA program, known as Regional Haze, which requires states to improve visibility at National Parks by reducing emissions that cause haze. In June 2011, New Mexico proposed a Regional Haze plan that required a \$36-million retrofit at the San Juan Generating Station. Three months later, in August 2011, the EPA rejected the state's plan, and imposed a federal plan that required a \$375-million retrofit at the power plant—more than ten times the cost of the state's plan. During the summer and fall of 2012, New Mexico Environment Department led negotiations in an attempt to reach an alternative agreement that would bridge the gap between the state and the EPA on Regional Haze. Last month, New Mexico Environment Department announced that it had concluded deliberations and proposed a settlement agreement. The proposed alternative Regional Haze plan has won favorable first looks from PNM Resources,¹ and it is now being considered by EPA.

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This is a settlement that the Land of Enchantment can do without. The EPA’s preferred plan for the San Juan Generating Station is a terrible deal for ratepayers because it requires an unnecessary expenditure of \$375 million, yet it does not add new generation to accommodate growing regional demand. Unfortunately, the New Mexico Environment Department’s settlement proposal is worse. It is about \$20 million more expensive than the EPA’s plan, yet it results in a loss of at least 140 megawatts of generating capacity. Simply put, the state’s proposed alternative costs more, for less.

New Mexico is much better off continuing to fight for its original, affordable Regional Haze proposal in court. In late 2011, the state sued the federal EPA over the agency’s plan in the Tenth Circuit Court of Appeals, and the case is ongoing. Due to the unique prerogatives accorded to states under the Regional Haze program, New Mexico’s lawsuit has good prospects for success. Even were New Mexico to lose its case, suffering the EPA’s regulation would be better than the settlement negotiated by the New Mexico Environment Department.

Settlement Is Most Expensive Option



Background. As noted, the San Juan Generating Station is a 1,770-megawatt coal-fired power plant near Farmington. It has four units: Units 1, 2, 3, and 4, with net rated capacities of 340 MW, 340 MW, 443 MW, and 647 MW, respectively. The utility PNM owns 50 percent of Units 1, 2, and 3 and 38.46 percent of Unit 4. The units were constructed as follows: Unit 1 in 1976, Unit 2 in 1973, Unit 3 in 1979, and Unit 4 in 1982.

In 1977, Congress amended the Clean Air Act (CAA) to include a visibility protection program, known as Regional Haze, and accorded states a unique degree of authority relative to other CAA regulatory regimes. Under the Regional Haze program, states, not the Environmental Protection Agency, are to be the lead decision makers.² A timeline of the current case follows.

- **June 2, 2011.** The New Mexico Environmental Improvement Board unanimously approved a Regional Haze compliance plan that had been crafted by the Environment Department. For the San Juan Generating Station, the state plan required haze-reducing retrofits known as Selective Non-Catalytic Reduction systems, at a cost to PNM of \$36 million.³
- **August 22, 2011.** The Environmental Protection Agency disapproved New Mexico's Regional Haze plan for the San Juan Generating Station and imposed a federal plan in its stead.⁴ For the San Juan Generating Station, the federal plan required retrofits known as Selective Catalytic Reduction systems, at a cost of \$375 million.⁵
- **October 21, 2011.** New Mexico sued the EPA over the agency's imposition of a federal Regional Haze plan in lieu of the state's plan.⁶ The lawsuit was filed before the Tenth Circuit Court of Appeals in Denver, Colorado.
- **March 1, 2012.** The Tenth Circuit Court of Appeals denied a petition by the state to issue an injunction that would postpone the EPA's Regional Haze federal implementation plan until the court decided the outcome of the case. The legal threshold for achieving an injunction is high, and the court did not explain its decision, so the public gained little insight into how the court judged the merits of New Mexico's case.
- **April 27, 2012.** New Mexico Governor Susana Martinez wrote EPA Administrator Lisa Jackson to request that the agency delay implementation of the Regional Haze regulation while the state tried to negotiate an alternative settlement that satisfied all stakeholders.⁷
- **July 16, 2012.** The EPA agreed to a 90-day stay of the Regional Haze federal plan, during which time the New Mexico Environment Department would lead negotiations for an alternative proposal.⁸
- **October 2, 2012.** The New Mexico Environment Department announced that it had reached a settlement proposal for an alternative plan that entails: the shutdown of San Juan Generating Station Units 1 and 2; installation of Selective Non-Catalytic Reduction retrofits at Units 3 and 4 (i.e., New Mexico's preferred controls); and the construction of a new gas-fired power plant.⁹
- **October 23, 2012.** Oral arguments were held before the Tenth Circuit Court of Appeals, during which New Mexico made its case that the EPA's imposition of a federal plan for Regional Haze was unlawful.¹⁰
- **October 24, 2012.** The EPA extended its delay for imposing a federal Regional Haze plan on New Mexico, while it considered the alternative settlement agreement.¹¹
- **Today:** New Mexico is employing a two-track strategy on Regional Haze. On the one hand, the state continues to contest the EPA in court. On the other, New Mexico's

Environment Department has proposed an alternative to both the original state plan and the EPA’s plan.

Settlement Agreement: A Closer Look. According to media reports, the New Mexico Environment Department’s proposed settlement agreement calls for the shutdown of San Juan Generating Station Units 1 and 2 by 2017. To partially replace that power, PNM would build a natural gas-fired power plant in the area. PNM would retrofit San Juan Generating Station Units 3 and 4 with the emissions controls that the state initially proposed (known as “selective non-catalytic reduction systems”). Remaining electricity needs would be met through existing natural gas power plant in the state.¹²

Unfortunately, however, the Environment Department did not make the settlement public. It also did not respond to my requests for information. Despite the lack of specifics, it is nonetheless possible to perform a line-item cost analysis of the proposal, using regulatory filings submitted by PNM and conservative assumptions. This is done below. The methodology for each cost estimate is provided in endnotes.

Line Item Cost Analysis of Proposal

200 Megawatt Combined Cycle Gas Plant ¹³	\$308,000,000 ¹⁴
Stranded Costs ¹⁵	\$41,404,000 ¹⁶
Retrofits for Units 3 and 4	\$18,771,000 ¹⁷
Annual Increase in Fuel Costs	\$27,407,787 ¹⁸
Total	\$395,582,787

There are at least two significant costs that are not included in the line-item analysis above. The first is a concession package for the Navajo Nation. The San Juan Generating Station and the coal mine that provides fuel to the plant are both heavily staffed by Navajos. Pursuant to the proposed agreement, PNM customers would have to pay to ensure that there is no adverse economic impact on the Navajo Nation due to the retirement of San Juan Generating Station Units 1 and 2. The second cost that is omitted from the line item cost analysis is the pipeline infrastructure necessary to deliver natural gas to the new combined cycle power plant.

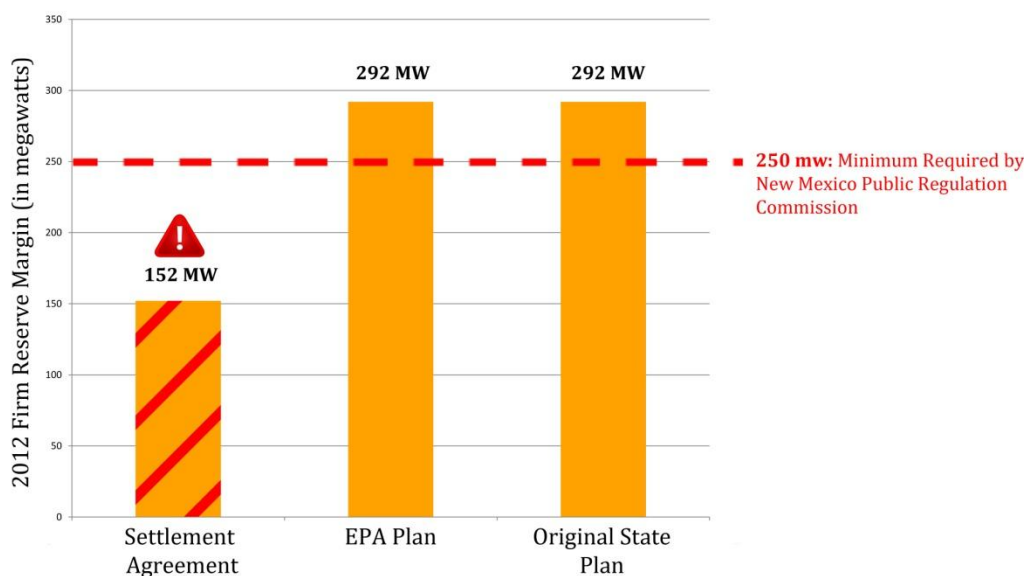
According to PNM, the EPA’s Regional Haze plan would require \$369 million in capital costs¹⁹ and \$6.5 million in variable annual costs,²⁰ for a total expenditure of about \$375 million. By comparison, the Environment Department’s proposed alternative would cost about \$395 million. Of course, both of these plans dwarf the costs of the original state proposal—about \$36 million. Neither the EPA’s plan nor the Environment Department’s plan would achieve a perceptible improvement in visibility over the original state proposal.

For Less Power. As explained in the previous section, the New Mexico Environment Department’s proposed alternative Regional Haze plan is almost \$20 million more expensive than the federal EPA’s plan. Despite costing more, the settlement agreement would result in a net

loss of firm generating capacity operated by PNM. Specifically, the proposal would replace 340 MW of coal-fired generation at the San Juan Generating Station with 200 MW of natural gas-fired electricity. Remaining power needs would come from existing natural gas plants, not new plants. As a result, the settlement agreement would result in the loss of 140 MW from PNM’s generating portfolio. This is a significant loss that raises serious reliability concerns.

In 2012, for example, PNM’s peak demand is projected to be 1,992 megawatts,²¹ while PNM’s total capacity is 2,284 megawatts.²² The difference between peak demand and total capacity is known as the firm reserve margin, and it is a key reliability metric. The New Mexico Public Regulation Commission requires that PNM plan for a reserve margin of no less than 250 megawatts.²³

Settlement Provides 140 MW Less Generation, Threatens Reliability



In 2012, PNM’s firm reserve margin was 292 megawatts. At 2012 levels, if the PNM system endures the loss of 140 megawatts of generating capacity due to the New Mexico Environment Department settlement proposal, then the reserve margin would dip to 152 megawatts, far below the 250 megawatt reliability threshold required by state regulators.

New Mexico’s Lawsuit Likely Will Win. New Mexico has three Regional Haze compliance plans on the table: the original proposal, the EPA’s imposed plan, and the New Mexico Environment Department’s settlement agreement. Of the three, the state’s original proposal is by far the best option for ratepayers. It would cost one-tenth of either the EPA’s plan or the settlement agreement, and it would achieve the same improvement in visibility.

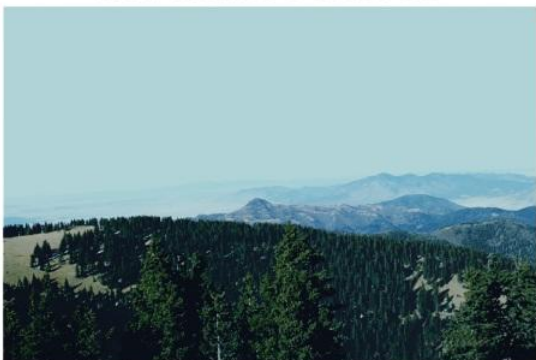
Currently, New Mexico is fighting for its original plan in an ongoing lawsuit before the Tenth Circuit Court of Appeals. In a previous paper,²⁴ I explain in detail how the EPA abused its authority in order to impose its preferred Regional Haze plan on New Mexico. Both the Clean Air Act and its legislative history indicate that the Congress evinced a special concern with

ensuring that states would be the lead decision makers on visibility improvement policy. The EPA's rejection of New Mexico's Regional Haze plan and imposition of a federal plan is at odds with the state's rightful authority as the Congress intended.

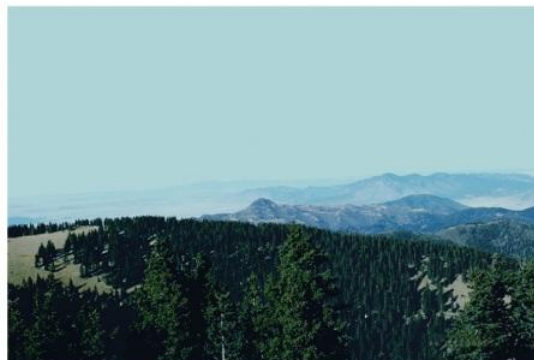
New Mexico's case is aided as well by common sense. The EPA plan would cost more than 10 times the state's plan, yet it would achieve a visibility "improvement" that is invisible. Using EPA data inputs and visibility modeling software created by researchers at Colorado State University, it is possible to create a visual representation of how the EPA's plan would affect visibility. Below are side-by-side images representing the imperceptible difference between New Mexico's proposed plan and the EPA's imposed plan.²⁵

Is this visibility "improvement" worth \$339 million?

New Mexico's Controls



EPA's Controls



White Mountain Wilderness Area, New Mexico

As a result of these factors, the odds are good that the courts will side with New Mexico. The New Mexico Environment Department would be a step backwards for PNM ratepayers. The best course is to continue to fight in court.

Notes

¹ In a press release, PNM Chairman, President and CEO Pat Callawn said, "The state proposal announced today appears to be an important step toward meeting our objectives of addressing the environmental needs of the regional haze program while lessening the cost impact to consumers and minimizing economic impact to the Four Corners Region." From *PNM New Release*, "New State Settlement Proposal for San Juan Generating Station Could Law Foundation for 'Third Alternative' Agreement," October 2, 2012

² Under the Regional Haze program, "states...play the lead role in designing and implementing Regional Haze programs" generally. In particular, the Clean Air Act "giv[es] the states broad authority over BART determinations." *American Corn Growers v. EPA*, 291 F.3d at 2(citing CAA §§ 169A(b)(2)(A); 169(A)(g)(2)).

³ This figure includes capital costs and variable annual costs (primarily reagent and auxiliary power). For capital costs, see Rate Impact Analysis, Exhibit 7u to NM Environment Department's May 2, 2011 Notice of Intent to Present Technical Testimony to the Environmental Improvement Board, http://www.nmenv.state.nm.us/aqb/reghaz/documents/NMED_Ex7u_RateImpactAnalysis_02112011.pdf. For variable annual costs, see Revised SNCR Analysis, Exhibit 7t to NM Environment Department's May 2, 2011 Notice of Intent to Present Technical Testimony to the Environmental Improvement Board, http://www.nmenv.state.nm.us/aqb/reghaz/documents/NMED_Ex7t_RevisedSNCRAnalysis_02112011.pdf.

⁴ Environmental Protection Agency, Approval and Promulgation of Implementation Plans; New Mexico; Federal Implementation Plan for Interstate Transport of Pollution Affecting Visibility and Best Available Retrofit Technology Determination, *Federal Register*, pp. 52387-52440, August 22, 2011.

⁵ This figure includes capital costs and variable annual costs (primarily reagent and auxiliary power). For capital costs, see Rate Impact Analysis, Exhibit 7u to NM Environment Department's May 2, 2011 Notice of Intent to Present Technical Testimony to the Environmental Improvement Board, http://www.nmenv.state.nm.us/aqb/reghaz/documents/NMED_Ex7u_RateImpactAnalysis_02112011.pdf. For variable annual costs, see SCR Cost Analysis Exhibit 7d to NM Environment Department's May 2, 2011 Notice of Intent to Present Technical Testimony to the Environmental Improvement Board, July 11, 2007, http://www.nmenv.state.nm.us/aqb/reghaz/documents/NMED_Ex7d_SCRCostAnalysis_07112007.pdf

⁶ *Martinez, et al v. EPA* was filed on October 21, 2011, in the 10th Circuit Court of Appeals.

⁷ PNM press release, PNM Response to Governor's Letter to EPA, April 27 2012, <http://www.pnm.com/news/2012/0427-response-martinez-epa-letter.htm>

⁸ EPA, Stay of the Effectiveness of Requirements; Approval and Promulgation of Implementation Plans; New Mexico; Federal Implementation Plan for Interstate Transport of Pollution Affecting Visibility and Best Available Retrofit Technology Determination, Federal Register pages 41697-41700, July 16, 2012.

⁹ Albuquerque Journal, "Proposal Shuts Part of Power Plant," October 3, 2012

¹⁰ Damon Scott, Regional Haze Dispute Goes to Federal Court, New Mexico Business Weekly, 23 October 2012 (available: <http://www.bizjournals.com/albuquerque/blog/morning-edition/2012/10/regional-haze-dispute-goes-to-federal.html>)

¹¹ EPA, Extension of Administrative Stay; Approval and Promulgation of Implementation Plans; New Mexico; Federal Implementation Plan for Interstate Transport of Pollution Affecting Visibility and Best Available Retrofit Technology Determination, Federal Register pages 64908-64911, 24 October 2012

¹² *Albuquerque Journal*, "Proposal Shuts Part of Power Plant," October 3, 2012.

¹³ According to *The Albuquerque Journal*, the settlement agreement calls for the construction of a 150-200 megawatt natural gas fired power plant (see previous reference). For this analysis, I assumed that this would be a 200-megawatt combined cycle natural gas plant. This assumption is predicated on resource modeling performed by PNM for its July, 2011, Integrated Resource Plan, which modeled the shutdown of San Juan Generating Station Units 1 and 2 (340 megawatts of coal-fired generation). The model response was to build a 252-megawatt combined cycle gas plant. See Figure 11-6 San Juan Retirement Comparison—Mid Load, page 139, PNM IRP 2011-2030, http://www.swenergy.org/news/news/documents/file/PNM_IRP_2011-2030_July_2011.pdf. Similarly, the 2011 IRP also modeled the shutdown of Four Corners Power Plant Units 4 and 5 (200 MW of coal-fired generation). Again, the model response was to build a 252-megawatt combined cycle power plant (see Figure 11-5. Four Corners Retirement Comparison—High Load, p 138 *ibid*). The model chose combined cycle plant (as opposed to less efficient, "peaker" natural gas plants) because coal—a base load power source—was being replaced, which necessitated as efficient a gas plant as possible. It would be illogical to replace a base load source with anything but a base load source, and combined cycle plants are the only base load generating technology for natural gas fuel.

¹⁴ PNM estimates that capital costs for a new combined cycle natural gas plant are \$1,540/kW. See Table 10—6. Cost Reliability and Environmental Performance for New Resource Options, page 116, PNM IRP 2011-2030, http://www.swenergy.org/news/news/documents/file/PNM_IRP_2011-2030_July_2011.pdf

¹⁵ Utility-scale capital outlays—like for a new power plant—can be tremendous. Utilities do not recoup their investments from ratepayers overnight, but over long durations as the capital is used. The upshot is that NM Mexico ratepayers are still on the hook for past investments in the two San Juan Generating Station units—which would be retired prematurely pursuant to the settlement agreement. These are known as "stranded costs," the most notable of which is a \$340 million environmental upgrade PNM completed on the San Juan Generating Station in 2009.

¹⁶ My estimate of stranded costs solely pertains to the stranded costs of the environmental improvements installed that were fully installed in 2009, and which were described in citation 15. For San Juan Generating Station Units 1 and 2, the total capital costs of the upgrade was \$165,618,000 (in 2007\$). See Table ES-1 Control and Cost-Effectiveness Results of Consent Decree Upgrades, PNM Best Available Retrofit Technology Analysis, page ES-2, http://www.nmenv.state.nm.us/aqb/reghaz/documents/PNMBARTReport_AppendixO-1.pdf. PNM owns 50 percent of the two units, so its share is \$82,809,000. Assuming a 20-year, straight line depreciation, starting in 2007 (the halfway point of construction) through 2017 (by which San Juan Generating Station Units 1 and 2 would retire under the proposed settlement), PNM ratepayers would owe \$41,404,000 in stranded costs. This is a simplistic estimate, in that I do not try to calculate PNM's authorized return on this capital investment nor do I account for inflation. Moreover, there are almost assuredly other capital investments that have not yet fully depreciated.

¹⁷ SNCR entails a capital cost of \$21,220,000 for both San Juan Generating Station Units 3 and 4. PNM owns 50 percent of Unit 3 and 38 percent of Unit 4. See Rate Impact Analysis, Exhibit 7t to NM Environment Department's May 2, 2011 Notice of Intent to Present Technical Testimony to the Environmental Improvement Board, Table 1 Impact Analysis and Cost-effectiveness Results of Addition NOx Control Technologies for San Juan Generating Station, page 4,

http://www.nmenv.state.nm.us/aqb/reg haz/documents/NMED_Ex7t_RevisedSNCRAnalysis_02112011.pdf.

¹⁸ In 2018, PNM projects that natural gas will cost \$5.93/MMBtu, while San Juan coal will cost \$3.06/MMBtu. (see Table 9-1, Detailed Fuel Cost Assumptions, PNM IRP 2011-2030, page 94). I assume that natural gas generation will have to replace 2,531,640 megawatt hours of coal generation (i.e., 340 megawatts of San Juan Generating Station generation at 85 percent capacity). For a new combined cycle natural gas power plant, I use PNM's assumed heat rate of 7.2 MMBtu/MWh (from Table 10-6. Cost, Reliability and Environmental Performance for New Resource Options, page 116, PNM IRP 2011-2030). For the San Juan Generating Station, I use a heat rate of 10.415 MMBtu/MWh, taken from the U.S. Energy Information Administration Average Operating Heat Rate for Selected Energy Resources, 2001 through 2010, <http://www.eia.gov/electricity/annual/pdf/table5.3.pdf>.

¹⁹ For capital costs, see Rate Impact Analysis, Exhibit 7u to NM Environment Department's May 2, 2011, Notice of Intent to Present Technical Testimony to the Environmental Improvement Board,

http://www.nmenv.state.nm.us/aqb/reg haz/documents/NMED_Ex7u_RateImpactAnalysis_02112011.pdf.

²⁰ For variable annual costs, see SCR Cost Analysis (July 11, 2007), Exhibit 7d to NM Environment Department's May 2, 2011, Notice of Intent to Present Technical Testimony to the Environmental Improvement Board,

http://www.nmenv.state.nm.us/aqb/reg haz/documents/NMED_Ex7d_SCRCostAnalysis_07112007.pdf.

²¹ See Table 8-6 Load and Resources Table with Mid-Load Forecast and Existing Resources, page 83, PNM IRP 2011-2030, http://www.swenergy.org/news/news/documents/file/PNM_IRP_2011-2030_July_2011.pdf.

²² Ibid.

²³ Resource Stipulation approved by the NMPRC on May 26, 2009, Utility Case No. 08-00305-UT,

²⁴ William Yeatman, EPA's Shocking New Mexico Power Grab, Competitive Enterprise Institute/Rio Grande Foundation Working Paper, October 2011, <http://cei.org/sites/default/files/William%20Yeatman%20-%20EPA%27s%20Shocking%20New%20Mexico%20Power%20Grab.pdf>.

²⁵ William Yeatman, EPA's New Regulatory Front: Regional Haze and the Takeover of State Programs, U.S. Chamber of Commerce, July 14, 2012, pp. 20-21, <http://cei.org/studies/epas-new-regulatory-front>.