BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF NEW MEXICO FOR REVISION OF ITS RETAIL ELECTRIC RATES PURSUANT TO ADVICE NOTICE NOS. 397 AND 32 (FORMER TNMP SERVICES),	)	**Case No. 10-00086-UT**
PUBLIC SERVICE COMPANY OF NEW MEXICO,	)	
Applicant.	)	

DIRECT TESTIMONY

OF

RALPH CAVANAGH

June 1, 2010

NMPRC CASE NO. 10-00086-UT
DIRECT TESTIMONY OF RALPH CAVANAGH
WITNESS FOR
PUBLIC SERVICE COMPANY OF NEW MEXICO

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EXHIBITS: PNM Exhibit RC-1 – Pamela Lesh, Rate Impacts and Key Design Elements of Gas and Electric Utility Decoupling: A Comprehensive Review, Electricity Journal (October 2009).

DIRECT TESTIMONY OF
RALPH CAVANAGH
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I. BACKGROUND AND QUALIFICATIONS

Q. PLEASE STATE YOUR NAME, ADDRESS AND EMPLOYMENT.

A. My name is Ralph Cavanagh. I am the Energy Program Co-Director for the Natural Resources Defense Council, 111 Sutter Street, 20th Floor, San Francisco, CA 94104.

Q. PLEASE OUTLINE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE.

A. I am a graduate of Yale College and Yale Law School, and I joined the Natural Resources Defense Council (NRDC) in 1979. NRDC is a nonprofit environmental advocacy organization with a long-standing interest in securing the environmental and economic benefits of energy efficiency across all sectors of the economy. I am a long-time member of the faculty of the University of Idaho's Utility Executive Course, and I have been a Visiting Professor of Law at Stanford and UC Berkeley. From 1993-2003, I served as a member of the U.S. Secretary of Energy's Advisory Board, and in March of 2008 I was appointed to serve on the U.S. Department of Energy's Electricity Advisory Committee. My current board memberships include the Bipartisan Policy Center, the Bonneville Environmental Foundation, the California Clean Energy Fund, the Center for Energy Efficiency and Renewable Technologies, the Northwest Energy Coalition, the Renewable Northwest Project, and the University of Wyoming's Ruckelshaus Institute. I have received the Mary Kilmarx Award from the National Association of Regulatory Utility Commissioners (2007), the Heinz Award for Public Policy (1996) and the Bonneville Power Administration's Award for Exceptional Public Service (1986). I

published my first article on ways to break the link between utilities' financial health and their retail energy sales more than twenty years ago.[1]

Q. ON WHOSE BEHALF ARE YOU TESTIFYING?

A. I am testifying as a witness for Public Service Company of New Mexico ("PNM" or "the Company").

Q. WHAT COMPENSATION IS THE COMPANY PROVIDING FOR YOU TO TESTIFY IN THIS PROCEEDING?

A. None.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISION ("COMMISSION")?

A. No. I have testified on related issues over the past three years before Commissions in Idaho, Nevada, Oregon, and Utah.

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY IN THIS PROCEEDING?

A. My testimony will provide the public policy rationale for supporting regulatory initiatives to remove disincentives for public utility expenditures on energy efficiency measures in a manner that balances the public interest, consumers' interests and investors' interests. I

[1] R. Cavanagh, Responsible Power Marketing in an Increasingly Competitive Era, 5 Yale Journal on Regulation (1988).

will also provide my reasons for recommending that the Commission adopt the Company's proposed decoupling mechanism for the residential and small commercial rate classes.

II. SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATIONS.

A. PNM is proposing a revenue decoupling mechanism that would advance both customer and environmental interests. As required by New Mexico's Efficient Use of Energy Act ("the Act"), the Company's proposal would remove regulatory disincentives for public utility expenditures on energy efficiency in a manner that balances the public interest, consumers' interests and investors' interests. The proposal also builds appropriately on the successful implementation of analogous decoupling mechanisms across the nation. And it helps align PNM's shareholder interests with customer interests in minimizing the cost of reliable electricity service.

One of PNM's most important responsibilities involves working to assemble a diversified mix of demand- and supply-side resources designed to minimize the societal costs of reliable electricity supplies, while meeting its obligation to provide safe and reliable electric service at just and reasonable rates. The Company is effectively a resource portfolio manager for its customers, and in the volatile financial markets of the early twenty-first century, the stakes and challenges have never been more daunting. Yet the regulatory status quo undercuts sound portfolio management by penalizing utility shareholders for reductions in electricity throughput over the distribution system, regardless of the cost-effectiveness of any contributing energy-efficiency, distributed-

generation or fuel substitution measures. From customers' perspective, increases in throughput (above those contemplated when rates were established) result inappropriately in an uncompensated over-recovery of fixed costs by their utility. And a grave if unintended pathology of such ratemaking practices is the linkage of utilities' financial health to retail electricity throughput. Increased retail electricity sales produce higher fixed cost recovery, and reduced sales have the opposite effect.

To address these inherent conflicts in traditional utility ratemaking approaches, I recommend that the Commission accept PNM's proposal to adopt a simple system of periodic cost true-ups, designed to correct for disparities between the Company's actual fixed cost recovery and the fixed-cost distribution revenue requirement approved by the Commission for the residential and small power sectors in this proceeding. The true-ups would either restore to the Company or give back to customers the dollars that were under- or over-recovered from these customers as a result of fluctuations in retail electricity sales.

III. THE MERITS OF PNM'S DECOUPLING PROPOSAL

Q. WHAT TOPICS WILL YOU ADDRESS IN THIS SECTION OF YOUR DIRECT TESTIMONY?

A. In this section of my direct testimony, I will address the continuing need for aggressive PNM efforts to help its customers achieve the ambitious goals of the Act, the potential adverse effects on the Company's shareholders of success in those efforts, and the specific justifications for the Company's proposal to decouple its financial health from fluctuations in electricity sales.

Q. DESCRIBE THE EVIDENCE THAT MARKET FAILURES CONTINUE TO BLOCK HIGHLY COST EFFECTIVE ENERGY SAVINGS AT TODAY'S ELECTRICITY PRICES.

A. The Act recognizes as much, of course, by mobilizing the state's utilities to pursue aggressive targets for cost-effective savings that are not being achieved through customers' responses to electricity prices. On this point, overwhelming evidence has been marshaled in recent years by the National Research Council of the National Academy of Sciences, the U.S. Congress's Office of Technology Assessment, the National Association of Regulatory Utility Commissioners, and the national laboratories, among many others. Although "[t]he efficiency of practically every end use of energy can be improved relatively inexpensively,"[2] "customers are generally not motivated to undertake investments in end-use efficiency unless the payback time is very short, six months to three years . . . The phenomenon is not only independent of the customer sector, but also is found irrespective of the particular end uses and technologies involved."[3] Typically, customers are demanding rates of return of 40-100+%, and such expectations differ sharply from those of investors in electric generation. Utilities' returns on capital average 12% or less. The imbalance between the perspectives of consumers and utilities invite large, relatively low-return investments in generation and grid assets that could be displaced with energy efficiency, yielding much higher returns

[2] U.S. National Academy of Sciences Committee on Science, Engineering and Public Policy, Policy Implications of Greenhouse Warming, p. 74 (1991). More recent reviews of energy-efficiency opportunities and barriers appear in National Research Council, Energy Research at DOE: Was it Worth It? (September 2001) and World Business Council for Sustainable Development, Energy Efficiency in Buildings: Transforming the Market, pp. 12 & 20 (2010).

[3] National Association of Regulatory Utility Commissioners, Least Cost Utility Planning Handbook, Vol. II, p. II-9 (December 1988).

to society (but not utility shareholders). These widely documented market failures generate "systematic underinvestment in energy efficiency," resulting in electricity consumption at least 20-40% higher than cost-minimizing levels.[4]

There are many explanations for the almost universal reluctance to make long-term energy efficiency investments.[5] Decisions about efficiency levels often are made by people who will not be paying the electricity bills, such as landlords or developers of commercial office space. Many buildings are occupied for their entire lives by very temporary owners or renters, each unwilling to make long-term improvements that would mostly reward subsequent users. And sometimes what looks like apathy about efficiency merely reflects inadequate information or time to evaluate it, as everyone knows who has rushed to replace a broken water heater, furnace or refrigerator.

Market failures like these mean that energy prices alone are a grossly insufficient incentive to exploit even the most inexpensive savings: customers who insist on two-year paybacks and see average rates of 7 cents/kWh "can be expected to forego demand-side measures with costs of conserved energy of more than 0.9 cents/kWh."[6] That is, energy prices would have to increase about eightfold to overcome the gap that typically emerges in practice between the perspectives of investors in energy efficiency and production, respectively.

[4] See M. Levine, J. Koomey, J. McMahon, A. Sanstad & E. Hirst, Energy Efficiency Policy and Market Failures, 20 Annual Review of Energy and the Environment 535, 536 & 547 (1995).
[5] An extensive assessment appears in U.S. Congress, Office of Technology Assessment, Building Energy Efficiency, at pp. 73-85 (1992).
[6] National Association of Regulatory Utility Commissioners, note 3 above, p. II-10.

Q. ARE YOU ADVOCATING PUNITIVELY HIGH ELECTRICITY RATES AS A SOLUTION TO THESE MARKET FAILURES?

A. Certainly not. I urge increased pursuit of cost-effective energy efficiency through coordinated applications of utility investments and government standards, rather than punitive prices.

Q. WHAT WOULD HAPPEN TO PNM'S PROSPECTS FOR RECOVERING AUTHORIZED FIXED COSTS IF IT WERE TO HELP ITS CUSTOMERS EXPLOIT THE HUGE POTENTIAL FOR COST-EFFECTIVE SAVINGS?

A. Although the societal and customer benefits would be significant, including avoided pollution and savings in both generation purchases and grid infrastructure investment, every additional unsold kilowatt-hour would reduce the Company's fixed-cost recovery and undercut shareholder welfare, unless the Commission changed current ratemaking policies. The Commission recognized as much in its recent rulemaking under the Act.[7] And it should be emphasized that this disincentive strikes with equal force at kilowatt-hours saved cost-effectively through innovative programs that utilities could potentially administer and well-designed efficiency standards that utilities could potentially support through advocacy and implementation funding. Until this problem is solved, utilities and their customers will lag in both aspirations and achievements on the demand side.

Q. HOW SUBSTANTIAL ARE POTENTIAL SHAREHOLDER LOSSES FROM REDUCED KILOWATT-HOUR SALES?

[7] See Case No. 08-00024-UT, Final Order Repealing and Replacing 17.7.2 NMAC (2010), pp. 21-22.

A. The Company's fixed cost revenue requirement for PNM North is approximately $628 million, of which $504 million are supposed to be recovered from variable demand and energy charges; energy charges alone account for $443 million. Every one percent reduction in electricity use and demand on the Company's system would cut annual fixed cost recovery totals by at least $5 million; every one percent increase would have the opposite effect. Also, since many efficiency measures last ten years or more, these one-year impacts must be multiplied at least tenfold when assessing shareholder interests.

But the losses get even worse in the context of multi-year programs initiated under a long-term resource plan. Consider a five-year program that pursues annual savings equivalent to one percent of system load in the initial year, with each year adding new savings equivalent to the savings achieved during the previous year, and all savings persisting for at least five years. The first year impact on fixed cost recovery is then at least five million dollars, followed by ten million dollars in the second year (as an equal amount of savings is added), and so on: **the automatic five-year loss to shareholders from this steady-state utility investment program would be seventy five million dollars**,[8] with shareholder losses continuing to escalate in succeeding years as initial electricity savings persisted (with some gradual erosion) and more savings were added. And the shareholders would be absorbing these losses even as society gained from substituting less costly energy efficiency for more costly generation.

Finally, note that shareholder losses will increase still further if – as I hope -- New Mexico continues to use "tiered" rate structures for residential customers, since some, if

[8] The minimum loss figure is the sum of $5 million + $10m + $15m + $20m + $25m = $75 million. ..

not most savings, will come from the highest price tier.[9] Ironically, progressive rate designs that raise rewards for saving energy (and costs of wasting it) hurt shareholders disproportionately when the price signal has its intended effect.

Q. WHY DO YOU BELIEVE THAT NEW MEXICO CAN SUSTAIN COST-EFFECTIVE ENERGY EFFICIENCY SAVINGS EQUIVALENT TO ABOUT ONE PERCENT OF SYSTEM CONSUMPTION, AS ASSUMED IN YOUR ILLUSTRATIVE CALCULATIONS?

A. New Mexico's Energy Efficiency Resource Standard anticipates as much with its 2020 goal, which is equivalent to ten percent (10%) of 2005 electricity consumption. *See*, NMSA 1978 § 62-17-5G. Targets at or above that level are now commonplace across the West, including the Northwest Power and Conservation Planning Council's newly adopted Sixth Regional Plan, the Arizona Corporation Commission's pending proposal, and Utah's statewide target.[10] Of course, savings can and should be delivered through an integrated combination of incentive programs and efficiency standards for equipment and buildings, and utility engagement is important for both.

Q. WOULD COST-EFFECTIVE FUEL SUBSTITUTION PROGRAMS HAVE THE SAME KIND OF ADVERSE EFFECT ON COMPANY EARNINGS?

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[9] The calculations above are based on average rates.

[10] See Northwest Power and Conservation Planning Council, *Sixth Northwest Conservation and Electric Power Plan (2010)* http://www.nwcouncil.org/energy/powerplan/6/default.htm. Utah's goal is to increase the state's overall energy efficiency 20% by the year 2015. See News Releases, State of Utah Governor Jon Huntsman, Jr., Governor Huntsman to Launch State Energy Efficiency Policy, June 25, 2006. The Arizona Commission's proposed Electric Energy Efficiency Standard would require utilities to achieve cumulative savings equivalent to 22 percent of electric load in 2019 by 2020. See ACC Decision No. 71436 (Dec. 18, 2009).

A. Yes. Substituting efficient gas applications for electricity reduces retail kilowatt-hour sales and has adverse effects on fixed-cost recovery that are identical (per kWh of lost retail sales) to those described above.

Q. WHY IS IT NOT PREFERABLE TO REMOVE THE LINKAGE BETWEEN PNM'S FINANCIAL HEALTH AND RETAIL SALES BY RECOVERING ITS FIXED COSTS IN HIGHER FIXED CHARGES TO CUSTOMERS?

A. This would significantly reduce customers' rewards for saving energy at the very time they should be encouraged to do more. If you raise the portion of the bill that is independent of energy consumption, you necessarily reduce the incentive to use less energy, while shifting costs from the heaviest users to the most sparing. Moreover, as I explained earlier in this testimony, the rationale for utility investment in cost-effective energy efficiency rests in part on the conclusion that extensive market failures continue to block energy savings that are much cheaper than additional energy production at <u>today's</u> electricity prices. Reducing customers' rewards for conserving electricity would only reinforce those barriers.

Q. DOES REVENUE DECOUPLING INTRODUCE PAINFUL OR UNSETTLING RATE VOLATILITY?

A. No. The Electricity Journal recently published a comprehensive assessment by Pamela Lesh of rate impacts of revenue decoupling, for which I was a reviewer; a copy is

attached as PNM Exhibit RC-1.[11] It is worth emphasizing her conclusion, based on a review of decoupling mechanisms over a decade for 28 natural gas and 17 electric utilities: rate adjustments moved both up and down and were uniformly modest, amounting to "less than $1.50 per month in higher or lower charges for residential gas customers and less than $2.00 per month in higher or lower charges for residential electric customers." (p. 67) In terms of rate volatility for residential electricity customers, then, the nation's experience with revenue decoupling comes down to adjusting utility bills by less than seven cents per day, in both directions.

Q. DOES REVENUE DECOUPLING GUARANTEE UTILITY PROFITS AND REDUCE A UTILITY'S INCENTIVE TO OPERATE EFFICIENTLY AND MINIMIZE COSTS?

A. Decoupling would not guarantee any particular level of realized "profit," or in any way insulate PNM against the risk that internal inefficiencies could prevent management from achieving profitability objectives. With or without decoupling, the Company keeps any operating savings that it achieves between rate cases and absorbs any cost overruns. Decoupling merely assures that PNM's opportunity to recover the overall fixed cost revenue requirement *previously authorized by the Commission* will not be affected by fluctuations in electricity use that the Commission did not anticipate when it set the Company's rates. It is hard to see a pro-shareholder or anti-consumer bias in that common sense proposition.

[11] Pamela Lesh, Rate Impacts and Key Design Elements of Gas and Electric Utility Decoupling: A Comprehensive Review, Electricity Journal (October 2009).

Q. HOW DO YOU RESPOND TO CONCERNS THAT DECOUPLING INSULATES UTILITIES FROM THE EFFECT OF AN ECONOMIC DOWNTURN, BUT RAISES CUSTOMERS' RATES AT A TIME WHEN CUSTOMERS CAN LEAST AFFORD IT?

A. I disagree with that contention. First, recognize that a decoupling proposal tied to fixed-cost revenue requirements per customer leaves utilities fully exposed to reductions in customer growth associated with economic downturns. As the Washington Commission found in similar circumstances: "[T]he revenue per customer mechanism does not insulate the company from fluctuations in economic conditions, because a robust economy would create additional customers and hence, additional revenue."[12] Moreover, in or out of recessions, decoupling will only raise rates at a time when bills are declining as consumption drops; it is of course utility bills, not rates, that matter to customers. And the best way to protect customers from unaffordable bills is to maximize cost-effective energy efficiency investment, which decoupling promotes and its absence discourages. The potential economic benefits to customers from cost-effective energy efficiency measures dwarf the very modest maximum annual rate increases that the PNM proposal could produce.

Q. DOES REVENUE DECOUPLING CREATE ITS OWN DISINCENTIVE FOR CUSTOMERS TO IMPROVE THEIR ENERGY EFFICIENCY, BY INCREASING RATES AND REDUCING SAVINGS IN THE AFTERMATH OF CONSERVATION EFFORTS?

[12] Docket No. UE-901183-T, Third Supplemental Order (April 10, 1991), p. 10.

A. On the contrary, as the Oregon PUC pointed out in its January 2009 order approving a decoupling proposal for Portland General Electric: "We believe the opposite is true: an individual customer's action to reduce usage will have no perceptible effect on the decoupling adjustment, and the prospect of a higher rate because of actions by others may actually provide *more* incentive for an individual customer to become more energy efficient."[13]

Q. IS IT INEQUITABLE TO INTRODUCE DECOUPLING ONLY FOR PNM'S RESIDENTIAL AND SMALL POWER CUSTOMERS?

A. I think decoupling makes sense for all customer classes, but proposals in several other states have focused on the very classes that PNM proposes to include, because their variable energy charges include a much larger share of system-wide fixed costs than other customer classes. I see nothing inequitable in ensuring that the residential and small power classes pay no less *and no more* than the PNM fixed costs assigned to it by the Commission.

Q. HOW SHOULD WEATHER ABNORMALITIES BE ADDRESSED IN DESIGNING A DECOUPLING MECHANISM?

A. The great majority of states that have implemented decoupling do not adjust sales for weather abnormalities when calculating true-ups,[14] and I agree with the Company that this is the right answer from both consumer and shareholder perspectives. It means that

[13] Oregon PUC, Order No. 09-020, p. 28 (January 2009).
[14] See Pamela Lesh, Rate Impacts and Key Design Elements of Gas and Electric Utility Decoupling: A Comprehensive Review, Electricity Journal, p. 70 (October 2009).

customers will receive partial refunds on abnormally high utility bills generated during extreme weather events, and that utilities will avoid the risk of under-collecting fixed costs when weather is unusually mild. No one gains by negating these mutual benefits through sales adjustments that "normalize" weather, and leave both customers and utility shareholders bearing unnecessary weather-related risks.

Q. WHAT EFFECT SHOULD THE INTRODUCTION OF REVENUE DECOUPLING HAVE ON PNM'S AUTHORIZED RATE OF RETURN?

A. None, because PNM's decoupling proposal has both positive and negative potential consequences, all relatively modest, in terms of shareholder returns, and the final outcome cannot be predicted with confidence in advance. The decoupling proposal affects only authorized fixed costs of service for residential and small power customers. PNM will be giving up some ability to gain from rising electricity sales as economic recovery accelerates across the state and nation, and avoiding some future losses associated with unanticipated downward fluctuations. It is impossible without experience to predict how that will affect the Company's overall risk profile and cost of capital. If decoupling were emerging as a clear win for electric utility shareholders, one would expect to see a nationwide utility-based campaign to achieve it. Nothing of the sort is visible. In my experience, electric utility managements typically have preferred to keep shareholders' fortunes tied directly to upward sales trends, as attested by my own struggles over two decades to persuade more electric utilities to embrace revenue decoupling. That may itself be strong evidence that the balance of customer/shareholder

interests is not likely to change to customers' disadvantage if New Mexico and other states accelerate the pace of reform.

Q. ABSENT SUCH A DOWNWARD ADJUSTMENT IN THE RATE OF RETURN, WHAT IS THE CUSTOMER BENEFIT FROM REVENUE DECOUPLING?

A. The most important benefits of revenue decoupling involve enhanced utility engagement in all aspects of cost-effective energy efficiency, from direct financial incentives to PNM's support for enhanced efficiency standards for buildings and equipment. These are the fastest and cleanest ways available to reduce the nation's $350 billion electricity bill. I have seen repeatedly over thirty years of engagement with the industry the formidable difference that motivated utilities can make in driving or frustrating energy efficiency progress. New Mexico has rightly set some of the nation's most ambitious energy efficiency targets for the electricity and natural gas sectors, with an eye to reducing customers' bills, improving environmental quality and enhancing statewide energy security. PNM is a crucial partner in that effort.

Two additional customer benefits bear emphasis. First, the form of decoupling proposed by PNM offers its customers protection against high bills associated with extreme weather conditions, as explained earlier. And second, PNM will refund to customers any gains in fixed-cost recovery associated with unanticipated increases in system-wide electricity use; absent decoupling, those gains go to shareholders rather than customers. Even as decoupling restores "lost revenues" from reduced sales to utilities, it requires utilities to restore "found revenues" from increased sales to customers, and this

should become increasingly important as the state's and nation's economic recovery gathers momentum.

Q. WHAT IS THE NATIONAL STATUS OF REVENUE DECOUPLING FOR ELECTRIC AND NATURAL GAS?

A. As of this filing, I count eighteen states that have adopted decoupling for one or more natural gas utilities and twelve (including the District of Columbia) for electric utilities. In the West, California, Oregon and Idaho have adopted decoupling for at least one electric utility, Arizona is addressing the issue in workshops convened by the Arizona Corporation Commission, and the Utah Commission will rule shortly on a proposal by its staff to introduce decoupling for Rocky Mountain Power. New Mexico's Commission has left open "the determination of whether a decoupling mechanism should be approved or required for any utility," and of course the New Mexico Legislature has underscored the urgent need to "identify regulatory disincentives or barriers for public utility expenditures on energy efficiency and load management measures and ensure that they are removed in a manner that balances the public interest, consumers' interests and investors' interests."[15]

IV. CONCLUSIONS

Q. DO YOU HAVE ANY CONCLUDING OBSERVATIONS?

[15] See Case No. 08-00024-UT, Final Order Repealing and Replacing 17.7.2 NMAC (2010), p. 10; Efficient Use of Energy Act, Section 62-17-5.F.

A. Yes. I recommend that the Commission approve the Company's decoupling proposal as a well designed and urgently needed way to remove regulatory disincentives for energy efficiency progress in New Mexico, in a manner that balances the public interest, consumers' interests and investors' interests.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

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