ACTION SHEET
PUBLIC UTILITES COMMITTEE MEETING 12/3/14

ISSUE NO. 17

Request for approval of Resolution No. 2015-_____. A resolution directing staff to explore, research and analyze the next steps identified in the December *2012 Final Report of a Preliminary Economic Feasibility Assessment of a Publicly-Owned Electric Utility for the City of Santa Fe and Santa Fe County* and report back to the governing body staff's findings related to the next steps, existing City and County policies and other staff considerations. (John Alejandro) (Councilor Maestas and Councilor Rivera)

Public Utilities Committee – 12/3/14
Finance Committee – 1/5/15
City Council – 1/14/15

PUBLIC UTILITIES COMMITTEE ACTION: Approved to forward to 1/5/15 Finance Committee.

SPECIAL CONDITIONS OR AMENDMENTS:

STAFF FOLLOW UP:

VOTE:	FOR	AGAINST	ABSTAIN
COUNCILOR RIVERA, CHAIR	x		
COUNCILOR MAESTAS	x		
COUNCILOR BUSHEE			x
COUNCILOR DIMAS	Excused		
COUNCILOR IVES	x		

City of Santa Fe, New Mexico

LEGISLATIVE SUMMARY

Resolution No. 2015-___

City County Public Power

SPONSOR(S): Councilors Maestas, Rivera and Ives

SUMMARY: The proposed resolution directs staff to collaborate with Santa Fe County staff to explore, research and analyze the next steps identified in the December 2012 *Final Report* of a *Preliminary Economic Feasibility Assessment of a Publicly-Owned Electric Utility for the City of Santa Fe and Santa Fe County* and report back to the Governing Body staff's findings related to the next steps, existing city and county policies and other staff considerations.

PREPARED BY: Rebecca Seligman, Legislative Liaison Assistant

FISCAL IMPACT: Yes

DATE: December 19, 2014

ATTACHMENTS: Resolution
FIR
Amendment Sheet (Maestas)

CITY OF SANTA FE, NEW MEXICO
PROPOSED AMENDMENT(S) TO RESOLUTION NO. 2015-___
City/County Public Power

Mayor and Members of the City Council:

We propose the following amendment(s) to Resolution No. 2015-__:

1. On page 4, ***delete*** lines 7 – 10 and ***insert*** the following in lieu thereof:

   BE IT FURTHER RESOLVED that within 60 days of adoption of this resolution, staff shall report back to the Governing Body its findings which shall include the following:

   - options, pros and cons, recommendations and fiscal impact related to the next steps, identified in the Preliminary Assessment;
   - proposed amendments to existing city and county renewable energy policies;
   - proposed amendments to City, County and State laws and public utility regulatory rules that will help to create the best environment for the acquisition, start up, and operation of a joint electric utility company; and
   - other staff considerations.

Respectfully submitted,

_____
Joseph Maestas, Councilor

ADOPTED: _____
NOT ADOPTED: _____
DATE: _____

_____
Yolanda Y. Vigil, City Clerk

CITY OF SANTA FE, NEW MEXICO

RESOLUTION NO. 2015-____

INTRODUCED BY:

Councilor Joseph Maestas

Councilor Chris Rivera

Councilor Peter Ives

A RESOLUTION

DIRECTING STAFF TO COLLABORATE WITH SANTA FE COUNTY STAFF TO EXPLORE, RESEARCH AND ANALYZE THE NEXT STEPS IDENTIFIED IN THE DECEMBER 2012 *FINAL REPORT* OF A *PRELIMINARY ECONOMIC FEASIBILITY ASSESSMENT OF A PUBLICLY-OWNED ELECTRIC UTILITY FOR THE CITY OF SANTA FE AND SANTA FE COUNTY* AND REPORT BACK TO THE GOVERNING BODY STAFF'S FINDINGS RELATED TO THE NEXT STEPS, EXISTING CITY AND COUNTY POLICIES AND OTHER STAFF CONSIDERATIONS.

WHEREAS, the City of Santa Fe and Santa Fe County jointly funded a preliminary feasibility assessment of a publicly-owned electric utility in Santa Fe in the amount of $50,000; and

WHEREAS, in December of 2012, the City and County were presented with the *Final Report* of a *Preliminary Economic Feasibility Assessment of a Publicly-Owned Electric Utility For the City of Santa Fe and Santa Fe County* prepared by MSA Capital Partners for New Energy Economy ("Preliminary Assessment") attached hereto as Exhibit A; and

WHEREAS, according to the Preliminary Assessment, Santa Fe can improve its quality of

life and local economy by creating a model electric utility that could:

- Help advance local and national efforts to address global climate disruption, reduce regional air and water pollution, save water and secure sustainable economic growth; and
- Move the area away from dependence on coal-fired power generation to natural gas, wind and solar with an energy efficiency standard that doubles the current state requirement, and economic development intended to support job growth and keep substantially more of electric consumers' dollars in the local economy; and

WHEREAS, the Preliminary Assessment is a preliminary economic feasibility study that addresses the economic benefits of having a public electric utility in Santa Fe that could build the local economy, create jobs and protect the public health and environment; and

WHEREAS, the Preliminary Assessment identifies and analyzes key economic considerations that might support the formation of Santa Fe Public Power ("SFPP") electric utility that would be jointly-owned and governed by the County and City similar to the City/County Buckman Direct Diversion facility and the Santa Fe Solid Waste Management Authority; and

WHEREAS, the Preliminary Assessment identifies steps that are necessary to advance the feasibility of SFPP; and

WHEREAS, the Governing Body desires for City staff to work in conjunction with Santa Fe County staff to explore, research and analyze the next steps identified in the Preliminary Assessment and present their joint findings to the Governing Body.

NOW, THEREFORE, BE IT RESOLVED BY THE GOVERNING BODY OF THE CITY OF SANTA FE that staff is directed to collaborate with Santa Fe County staff to explore, research, and analyze the following next steps identified in the Preliminary Assessment:

1) <u>Public/Community Education and Outreach and Public Opinion Assessment</u> - A variety of public education and outreach strategies should be initiated to determine

the extent to which Santa Fe residents are aware of the region's current electric power environment (e.g., percent of power generated from traditional and renewable sources, greenhouse gas emissions, state laws regarding renewable energy and energy efficiency, historic rate increases, etc.). In conjunction with the education and outreach efforts, a variety of public opinion strategies (opinion surveys, town halls, City and County web site feedback, etc.) should be implemented to assess citizens' feelings around energy, environment, and electric utility issues.

Responses to public opinion initiatives will help guide future steps. If the sampling response is positive to the underlying concept, then a properly funded and organized public education campaign may be warranted as a means of building public understanding of and support for SFPP.

2) Refinement of Costs - The preliminary assessment needs to be augmented with a much more refined, technical-level engineering analysis of PNM's load profile in the County, the location, age and condition of PNM's distribution system, and the real extent to which SFPP could acquire and pay for a sustainable power supply sourced entirely from natural gas, solar and wind. Whether this plan could actually be implemented with long-term Power Purchase Agreements in the wholesale market and a small core professional staff to plan and manage SFPP's load, with outsourced operation and maintenance (O/M) and administration services, deserves careful scrutiny.

3) PNM's Role - Determine PNM's attitude toward a cooperative venture with the City and County. Areas to be addressed might include a lease or lease/purchase of the distribution system, an O/M contract with PNM, and outsourced customer service and billing functions. In this regard, the availability of wholesale renewable energy and transmission capacity from PNM would also be important to clarify.

4) Availability of Energy - There is a need to further investigate and characterize wholesale energy markets for near-term availability of natural gas-derived electricity and renewables. Turnkey developers and suppliers should be consulted on the cost and availability of long-term supply contracts for Santa Fe in the range of 100 MW of daily capacity. A technical review of the regional transmission system for capacity constraints, including projects under development, should also be considered.

BE IT FURTHER RESOLVED that within 60 days of adoption of this resolution, staff shall report back to the Governing Body its findings which shall include options, pros and cons, recommendations and fiscal impact related to the next steps, identified in the Preliminary Assessment; existing city and county policies; and other staff considerations.

PASSED, APPROVED and ADOPTED this ___ day of _____, 2014.

_____

JAVIER M. GONZALES, MAYOR

ATTEST:

_____

YOLANDA Y. VIGIL, CITY CLERK

APPROVED AS TO FORM:

Kelley A. Brennan

KELLEY A. BRENNAN, CITY ATTORNEY

M/Melissa/Resolutions 2014/City County Public Power

FIR No. 2594

City of Santa Fe
Fiscal Impact Report (FIR)

This Fiscal Impact Report (FIR) shall be completed for each proposed bill or resolution as to its direct impact upon the City's operating budget and is intended for use by any of the standing committees of and the Governing Body of the City of Santa Fe. Bills or resolutions with no fiscal impact still require a completed FIR. Bills or resolutions with a fiscal impact must be reviewed by the Finance Committee. Bills or resolutions without a fiscal impact generally do not require review by the Finance Committee unless the subject of the bill or resolution is financial in nature.

Section A. **General Information**

(Check) Bill: _____ Resolution: ___X___

(A single FIR may be used for related bills and/or resolutions)

Short Title(s): **A RESOLUTION DIRECTING STAFF TO COLLABORATE WITH SANTA FE COUNTY STAFF TO EXPLORE, RESEARCH AND ANALYZE THE NEXT STEPS IDENTIFIED IN THE DECEMBER 2012 *FINAL REPORT* OF A *PRELIMINARY ECONOMIC FEASIBILITY ASSESSMENT OF A PUBLICLY-OWNED ELECTRIC UTILITY FOR THE CITY OF SANTA FE AND SANTA FE COUNTY* AND REPORT BACK TO THE GOVERNING BODY STAFF'S FINDINGS RELATED TO THE NEXT STEPS, EXISTING CITY AND COUNTY POLICIES AND OTHER STAFF CONSIDERATIONS.**

Sponsor(s): Councilor Maestas

Reviewing Department(s): City Attorney's Office

Persons Completing FIR: Rebecca Seligman / John Alejandro Date: 12/5/14 Phone: 955-6501 / 955-6236

Reviewed by City Attorney: Kelley A. Brennan (Signature) Date: 12/18/14

Reviewed by Finance Director: [signature] (Signature) Date: 12-19-2014

Section B. **Summary**

Briefly explain the purpose and major provisions of the bill/resolution:

The proposed resolution, directs staff to collaborate with Santa Fe County staff to explore, research and analyze the next steps identified in the December 2012 *Final Report* of a *Preliminary Economic Feasibility Assessment of a Publicly-Owned Electric Utility for the City of Santa Fe and Santa Fe County* and report back to the Governing Body staff's findings related to the next steps, existing city and county policies and other staff considerations.

Section C. **Fiscal Impact**

Note: Financial information on this FIR does not directly translate into a City of Santa Fe budget increase. For a budget increase, the following are required:

a. The item must be on the agenda at the Finance Committee and City Council as a "Request for Approval of a City of Santa Fe Budget Increase" with a definitive funding source (could be same item and same time as bill/resolution)

b. Detailed budget information must be attached as to fund, business units, and line item, amounts, and explanations (similar to annual requests for budget)

c. Detailed personnel forms must be attached as to range, salary, and benefit allocation and signed by Human Resource Department for each new position(s) requested (prorated for period to be employed by fiscal year)*

1. Projected Expenditures:

a. Indicate Fiscal Year(s) affected – usually current fiscal year and following fiscal year (i.e., FY 03/04 and FY 04/05)

b. Indicate: "A" if current budget and level of staffing will absorb the costs
"N" if new, additional, or increased budget or staffing will be required

c. Indicate: "R" – if recurring annual costs
"NR" if one-time, non-recurring costs, such as start-up, contract or equipment costs

d. Attach additional projection schedules if two years does not adequately project revenue and cost patterns

e. Costs may be netted or shown as an offset if some cost savings are projected (explain in Section 3 Narrative)

Finance Director: _____

____X_____ Check here if no fiscal impact

Column #: 1	2	3	4	5	6	7	8
Expenditure Classification	FY __	"A" Costs Absorbed or "N" New Budget Required	"R" Costs Recurring or "NR" Non-recurring	FY _____	"A" Costs Absorbed or "N" New Budget Required	"R" Costs – Recurring or "NR" Non-recurring	Fund Affected
Personnel*	$_____	_____	_____	$_____	_____	_____	_____
Fringe**	$_____	_____	_____	$_____	_____	_____	_____
Capital Outlay	$_____	_____	_____	$_____	_____	_____	_____
Land/ Building	$_____	_____	_____	$_____	_____	_____	_____
Professional Services	$_____	_____	_____	$_____	_____	_____	_____
All Other Operating Costs	$_____	_____	_____	$_____	_____	_____	_____
Total:	$_____			$_____			

* Any indication that additional staffing would be required must be reviewed and approved in advance by the City Manager by attached memo before release of FIR to committees. **For fringe benefits contact the Finance Dept.

2. Revenue Sources:

a. To indicate new revenues and/or

b. Required for costs for which new expenditure budget is proposed above in item 1.

Column #: 1	2	3	4	5	6
Type of Revenue	FY _____	"R" Costs Recurring or "NR" Non-recurring	FY _____	"R" Costs – Recurring or "NR" Non-recurring	Fund Affected
_____	$_____	_____	$_____	_____	_____
_____	$_____	_____	$_____	_____	_____
_____	$_____	_____	$_____	_____	_____
Total:	$_____		$_____		

3. Expenditure/Revenue Narrative:

Explain revenue source(s). Include revenue calculations, grant(s) available, anticipated date of receipt of revenues/grants, etc. Explain expenditures, grant match(s), justify personnel increase(s), detail capital and operating uses, etc. (Attach supplemental page, if necessary.)

N/A

Section D. **General Narrative**

1. Conflicts: Does this proposed bill/resolution duplicate/conflict with/companion to/relate to any City code, approved ordinance or resolution, other adopted policies or proposed legislation? Include details of city adopted laws/ordinance/resolutions and dates. Summarize the relationships, conflicts or overlaps.

None staff is aware of

2. Consequences of Not Enacting This Bill/Resolution:

Are there consequences of not enacting this bill/resolution? If so, describe.

If this resolution is not enacted, city staff will not be able to collaborate with Santa Fe County staff to research and analyze the next steps identified in the December 2012 *Final Report* of a *Preliminary Economic Feasibility Assessment of a Publicly-Owned Electric Utility for the City of Santa Fe and Santa Fe County* and report back to the Governing Body.

3. Technical Issues:

Are there incorrect citations of law, drafting errors or other problems? Are there any amendments that should be considered? Are there any other alternatives which should be considered? If so, describe.

No

4. Community Impact:

Briefly describe the major positive or negative effects the Bill/Resolution might have on the community including, but not limited to, businesses, neighborhoods, families, children and youth, social service providers and other institutions such as schools, churches, etc.

The resolution, if approved, will afford city staff the opportunity to collaborate with Santa Fe County staff to research and analyze the next steps identified in the December 2012 *Final Report* of a *Preliminary Economic Feasibility Assessment of a Publicly-Owned Electric Utility for the City of Santa Fe and Santa Fe County* and report back to the Governing Body staff's findings related to the next steps, existing city and county policies and other staff considerations. The information in the report may be helpful in determining the additional requirements and/or steps necessary towards establishing a publicly-owned utility.

Form adopted: 01/12/05; revised 8/24/05; revised 4/17/08

FINAL REPORT

Preliminary Economic Feasibility Assessment of a Publicly-Owned Electric Utility for the City of Santa Fe and Santa Fe County

December 2012

by

MSA Capital Partners

for New Energy Economy

EXHIBIT A

Foreword

By creating a model public electric utility with leading edge innovations in energy efficiency, renewable energy and related economic development, the Santa Fe region can improve its quality of life and local economy. Such a unique public utility will help advance local and national efforts to address global climate disruption, reduce regional air and water pollution, save water and secure sustainable economic growth. Nationally, and in New Mexico, publicly-owned utilities have lower rates than investor-owned utilities. Absent the need to make a profit, public utilities also are freer to showcase forward-thinking policies and greater investment in efficiency and clean energy.

A public electric utility in Santa Fe would move the area away from dependence on coal-fired power generation to natural gas, wind and solar with an energy efficiency standard that doubles the current state requirement, and economic development intended to support job growth and keep substantially more of electric consumers' dollars in the local economy. Residential and commercial customers are likely to experience lower expenditures for electricity and a relative level of stability in monthly utility bills. These objectives can be achieved. With significant savings from energy efficiency and a home-town investment in solar, a public electric utility in Santa Fe can build the local economy, create good jobs, and protect public health and our environment. This preliminary economic feasibility study analyzes the economic benefits for achieving these important goals and the resources required to succeed.

New Energy Economy acknowledges and appreciates the support of Santa Fe County and the City of Santa Fe in funding the preliminary feasibility assessment of a publicly-owned electric utility in Santa Fe and likewise the contribution of Mitchel Stanfield and Taylor Gunn of MSA Capital Partners, as NEE's study consultants for the project.

Of equal importance to the report was the participation of NEE, including David Van Winkle of NEE's Board of Directors in all aspects of the consultants' work, and the sponsorship and important inputs by Craig O'Hare, Energy Programs Specialist with Santa Fe County and Nick Schiavo, Lead Energy Specialist for the City of Santa Fe.

Mariel Nanasi,
Executive Director
New Energy Economy
Santa Fe, NM

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*Based on total revenue divided by total sales for PNM, as reported by the U.S. Energy Information Administration (EIA)

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EXECUTIVE SUMMARY

INTRODUCTION AND STUDY OVERVIEW

This preliminary assessment is intended to address the key elements of the County's Memorandum of Agreement for this project with New Energy Economy. Study objectives include providing data on electricity sales and trends in the region, costs of implementing a County/City-owned electric utility, the potential market over the next 20 years, impact on electricity rates and bills in comparison to PNM, and importantly, the economic costs and environmental benefits of sharply increased use of renewable energy sources and an Aggressive Energy Efficiency Standard on the region's demand for power.

The study examines three scenarios for servicing the region's power requirements over a 20-year period, from 2013 to 2033. Two alternatives apply to a City and County-owned electric utility, called Santa Fe Public Power (SFPP) in this report: Scenario 1 - purchased natural gas, solar, and wind-sourced power on the wholesale market over 20 years, and Scenario 2 - a combination of purchased power and the acquisition of locally-sited natural gas generation and utility-scale solar by SFPP beginning in 2020, year eight. Both scenarios include distributed generation from customer-scale photovoltaic (PV) solar at a level of 7.5% of the total electric energy supply beginning in 2013 and ramping up to 11.25% in 2028.

The SFPP scenarios are compared to a "Status Quo" scenario which assumes continued ownership and operation of the area's electric utility by PNM. The following table represents a snapshot of SFPP's performance on key indicators compared to the Status Quo in 2028, 15 years after start-up. The percentages remain level through the remainder of the study period ending in 2033, with flat growth in: the ratio of renewables to natural gas in SFPP's fuel mix, customer-scale solar generation, and the impact of the Aggressive Energy Efficiency Standard on residential and commercial per customer usage of electricity.

Year 2028 Scenario Comparisons	SFPP Scenario 1	SFPP Scenario 2	PNM-Status Quo
% of energy efficiency savings	20	20	8
% of energy from renewable sources	45	45	20
% of energy from coal	0	0	60
% of energy sourced in Santa Fe County*	11.25	84	2
% of customer-scale renewable energy	11.25	11.25	0.6

*Customer-scale solar ramps from 7.5% of total energy in 2013 to 11.25% in 2028 and thereafter. In Scenario 2, customer-scale solar also grows to 11.25% in 2028. In SFPP2, partial ownership of an in-county natural gas combined cycle plant in 2020 and SFPP-owned utility-scale solar in the County by 2028 boosts locally-sited natural gas and solar-electricity to 84% of SFPP2's total energy supply. The balance is made up of purchased wind energy through long-term Power Purchase Agreements or on the short-term market.

The tables below compare how much less rates and bills are projected to be for SFPP customers, as a percentage, relative to PNM rates and bills. The base case in Scenarios 1 and 2 includes acquisition costs of $155 million. To observe the impact on SFPP bills and rates, a sensitivity analysis was completed assuming an additional $100 million to base case acquisition costs.

In 2015, for the base case, SFPP1 rates are projected to be 15% less than PNM's rates. This is a result of SFPP producing only enough revenue required to cover operating expenses, which does not include the need to make a profit (i.e. a return on capital). In the same year, SFPP bills are projected to be 17% less than the Status Quo because customers will be using less energy as a result of SFPP's Aggressive Energy Efficiency Standard, compared to the Status Quo Scenario.

Scenario 1- Percent SFPP Rates and Bills are less than Status Quo

	2015		2022		2028	
	Base Case	+ $100 Million	Base Case	+ $100 Million	Base Case	+ $100 Million
SFPP vs PNM Rates	15%	11%	12%	9%	20%	18%
SFPP vs PNM Bills	17%	13%	21%	18%	31%	30%

Scenario 2- Percent SFPP Rates and Bills are less than Status Quo

	2015		2022		2028	
	Base Case	+ $100 Million	Base Case	+ $100 Million	Base Case	+ $100 Million
SFPP vs PNM Rates	17%	12%	8%	5%	18%	17%
SFPP vs PNM Bills	19%	14%	17%	15%	29%	28%

The impact to bill payers of implementing more aggressive energy efficiency programs and converting from primarily a coal and nuclear energy strategy are shown in the SFPP/Status Quo-PNM rate and bill comparison above. In all time frames, the cost to the bill payer is projected to be less than the Status Quo scenario. The primary reasons for this are: more aggressive implementation of energy efficiency measures, reduced cost of capital (no need to generate a profit and lower borrowing costs), and reduced administrative expense (lower executive compensation).

Certain cost assumptions in this report have been used to determine SFPP's projected rates and bills compared with the PNM Status Quo scenario. Should the actual SFPP system acquisition costs and other start-up expenses and financing assumptions deviate from those assumed for this report, the rate and bill comparisons will necessarily change as well.

BACKGROUND

Both the City and County of Santa Fe have established aggressive clean energy policy directives – the City in its 2008 "Sustainable Santa Fe Plan" and the County in its 2010 "Sustainable Growth Management Plan." With those clean energy objectives in mind, both plans mention an interest in investigating the feasibility of establishing a City/County-owned electric utility as an alternative to the existing arrangement – service by Public Service Company of New Mexico (PNM), an investor-owned utility (IOU). Santa Fe County commissioned an "Electrical Distribution System Study for Santa Fe County" (Cibola Engineering, 2008) which confirmed that establishing a public power utility for the Santa Fe region is technically feasible. The study recommended that the City and County of Santa Fe work together and that any technical challenges could be managed with careful planning.

In 2009, the Santa Fe Regional Planning Authority (RPA), consisting of four City Councilors and four County Commissioners, created an Energy Task Force (ETF). The charter of this task force is to recommend specific sustainable energy projects for the City of Santa Fe and Santa Fe County. In a formal letter to the RPA, the ETF requested that a preliminary economic feasibility study be conducted to analyze the potential impact of a City/County public power utility.

As a result, the County of Santa Fe entered into an agreement with New Energy Economy, a local non-profit organization, in 2011 to secure a contractor to complete a preliminary economic feasibility study of a County-Municipal electric utility. New Energy Economy contracted with MSA Capital Partners, a Santa Fe-based consulting firm that specializes in infrastructure finance, with global experience over a 22-year period in feasibility analysis and early-phase preparation of projects in the energy, environmental, and transport sectors. New Energy Economy supervised the contractor's work and arranged for a report of findings and a public presentation of the study.

MSA prepared the assessment with publicly available information and data from the American Public Power Association, USDOE's Energy Information Administration, PNM filings with the New Mexico Public Regulation Commission, federal Securities and Exchange Commission and Federal Energy Regulatory Commission, from other area power market and energy sources, consultation with County and City energy staff, and limited field work. The firm worked closely with NEE management and its Board and volunteers. The report's findings are contained herein.

ASSESSMENT APPROACH

Two scenarios were developed for SFPP and compared to a third "Status Quo" scenario. The Status Quo scenario assumes continued ownership and operation of the utility by PNM.

Area-wide Power Market - The study assumes that beginning in 2013 Santa Fe Public Power will acquire the electric consumer market in Santa Fe County currently serviced by PNM, which comprises around 90% of the total electric demand of residential and commercial customers in

the County. County residents served by rural electric cooperatives are not assumed to become a part of SFPP.

Electric energy usage and generation is generally characterized in two manners: 1) over a period of time, measured in gigawatt-hours (GWh), megawatt-hours (MWh), or kilowatt-hours (kWh), (see glossary of terms in Appendix A of the report); and 2) Electricity demand at an instantaneous point in time, measured in megawatts (MW) or kilowatts (kW) – usually referred to as system "load" in the electric utility discipline.

For all three scenarios, projected energy usage is estimated to be 810,000 MWh in 2013, with average daily energy usage of over 2,200 MWh and a customer base of 56,000 residential and commercial meters. In 2013, the base demand is 80 MW, with a peak demand of 160 MW (generally occurring in the summer with the impact of refrigerated air conditioning). Base demand represents the minimum amount of energy demanded from Santa Fe customers at any given time.

The three scenarios are:

1. SFPP1 - Purchased Power: SFPP buys wholesale power. SFPP implements more aggressive energy efficiency measures than what are assumed under the Status Quo scenario, and provides incentives to grow customer-scale solar to 11.25% of total electric energy generation.
2. SFPP2 - Purchased Power/Self-Generation: SFPP buys wholesale power for the first seven years and then builds generation facilities for locally-sited natural gas and utility-scale solar. SFPP implements the same energy efficiency measures and incentives for customer-scale solar as Scenario 1.
3. Status Quo - PNM continues to own and operate the electricity service.

These three scenarios were evaluated over a 20-year period, assuming a 2013 start-up, through 2033. Of course, a 2013 start-up date is not realistic given the significant lead time it would take to establish SFPP. This date is used simply to generate the 20-year analyses. The scenarios and their outcomes from this preliminary analysis are as follows:

SFPP Scenario 1: Santa Fe Public Power utilizes Wholesale Power Purchase

Start-up and Distribution System Acquisition Costs: If Santa Fe Public Power can avoid costly litigation expenses at the outset it would incur realistic start-up costs of $49 million, as outlined in Section 4.3. Unforeseen legal and regulatory costs, however, and credit requirements for purchased power could increase these costs to more than $100 million.

In addition, the new utility would be faced with the acquisition cost of PNM's distribution system. The replacement cost and book value of PNM's entire distribution system were referenced from PNM's 2011 FERC Form 1. Santa Fe's portion of PNM's 2011 revenues (9.2%) was applied to approximate the value of the distribution system serving Santa Fe County. The cost of Santa Fe's distribution system ranges from its declared book value of $65 million to its replacement cost, estimated to be $106 million. In order to not underestimate acquisition costs, for the

purposes of this study, it was assumed SFPP would pay $106 million for the distribution system. Start-up and acquisition costs of $155 million would be financed through a combination of taxable and tax-exempt bond issues.

Energy Efficiency: SFPP will implement energy efficiency measures far beyond what is required of private utilities pursuant to the state Efficient Use of Energy Act (EUEA) This "Aggressive Energy Efficiency Standard" will achieve a 20% reduction in per customer residential and commercial energy usage by 2028. The expense necessary to achieve this target is estimated to be 2.60¢ per kilowatt-hour (kWh) of electricity usage reduced, which is included in the operating costs of the new utility. The aggressive standard doubles the current state requirement contained in the state EUEA which mandates that PNM achieve an energy savings of 10% by 2020, from a 2005 baseline. A recent report by Southwest Energy Efficiency Project (SWEEP) indicates that 2% savings per year at a cost of 2.6¢/kWh is achievable. Thus, 20% savings over 15 years is attainable, according to the SWEEP report.

Energy Portfolio: In both SFPP scenarios, neither coal nor nuclear-generated energy would be utilized in any time period. The initial (2013) energy portfolio would be composed of 75% natural gas and 25% solar and wind energy, with power acquired entirely in the wholesale market or via contract. The share of renewable energy in the portfolio would rise to 45% by 2028 (year 15 from start-up), and very likely remain at that level until technology for commercial-scale energy storage becomes cost effective. Wholesale power cost assumptions are consistent with quotes for energy purchase that PNM received in 2012.

SFPP Scenario 1- Percent of Energy from Various Sources (rounded)

	2013	2020	2022	2028	2033	Cost $/kWh*
Natural Gas	75%	70%	66%	55%	55%	0.05
Wind	18%	18%	20%	29%	29%	0.05
Utility-Scale Solar	5%	5%	5%	5%	5%	0.08
Customer-Scale Solar	2%	8%	9%	11%	11%	0.14
% Renewables	25%	30%	34%	45%	45%	

*Costs are in 2012 dollars assumed to escalate annually at 2.0%

Economic Development: This scenario has appreciably greater local economic development and job creation than the Status Quo due to its emphasis on customer-scale renewable energy and more aggressive energy efficiency programs. Santa Fe Public Power would secure 7.5% of its total energy from customer-scale solar in 2020, increasing to 11.25% in 2028. The public utility would support the growth of this local market with incentives, averaging 14¢ per kWh over 20 years, including net metering benefits. Energy efficiency programs also provide significant job creation, mainly through efficiency renovations of existing commercial and residential structures.

Bill/rate impact: In all time frames, the cost to the bill payer is less than continuing to use PNM as the electric provider. The primary reasons for this are: more aggressive implementation of

energy efficiency measures, reduced cost of capital (no profit and lower cost of borrowing), and reduced administrative expense (lower executive compensation).

SFPP Scenario 1- Percent SFPP Rates and Bills are less than PNM's

	2015		2022		2028	
	Base Case	+ $100 Million	Base Case	+ $100 Million	Base Case	+ $100 Million
SFPP vs PNM Rates	15%	11%	12%	9%	20%	18%
SFPP vs PNM Bills	17%	13%	21%	18%	31%	30%

Low Income Rate Considerations: If it desired, SFPP could create "lifeline" rates to assure affordable electric power for its lower income customers. In contrast, PNM does not offer low-income rates. In fact, a NM Supreme Court case currently prevents New Mexico's investor-owned utilities from having special rates for low-income families.

SFPP Scenario 2: Santa Fe Public Power begins operation with wholesale purchased power and begins local, utility-owned generation in 2020.

Start-up and Distribution System Costs – same as Scenario 1
Energy Efficiency – same as Scenario 1
Energy Portfolio – Santa Fe Public Power would use neither coal nor nuclear-generated energy in any time period. The initial energy portfolio would be composed of 70% natural gas and 30% solar and wind energy, with power acquired entirely in the wholesale market or through contract. The share of renewable energy in the portfolio would rise to 45% by 2028, and very likely remain at that level until technology for commercial-scale energy storage becomes cost effective. Cost assumptions for energy purchases are consistent with quotes for energy purchases that PNM received in 2012. This scenario differs from Scenario 1 by building 126 MW of electric generation facilities in the County: a 66 MW share of a 200 MW natural gas combined cycle power plant in 2020 and 60 MW of utility-scale solar facilities in 2022 and, consequently, phasing down purchased power.

SFPP Scenario 2 – Percent of Energy from Various Sources (rounded)

	2013	2020	2022	2028	2033	Cost $/kWh*
Natural Gas	70%	70%	66%	55%	55%	0.05
Wind	28%	23%	7%	16%	17%	0.05
Utility-Scale Solar	0%	0%	18%	17%	17%	0.08
Customer-Scale Solar	2%	8%	9%	11%	11%	0.14
% Renewables	30%	30%	34%	45%	45%	

*Costs are in 2012 dollars assumed to escalate annually at 2.0%. By 2028, natural gas and utility-scale solar are locally sited.

Economic Development: This scenario has significantly greater regional economic development potential than SFPP1 and much more than the Status Quo due to its strong focus on locally-based electric generation. Santa Fe Public Power would secure at least 25% of its renewable energy requirement, or 11.25% of the utility's total electric energy needs, from local

customer-scale solar by 2028. The public utility would support the growth of this local market with incentives, averaging 14¢ per kWh. Energy efficiency programs also provide significant job creation. This scenario would provide further local economic development by building and operating a locally-sited natural gas combined cycle power plant in 2020 (66 MW of a 200 MW plant) and 60 MW of utility-scale solar capacity in 2022, resulting in locally-sourced generation constituting 84% of total generation by 2028.

Bill/rate impact: In all time frames, the cost to the bill payer is projected to be less than the Status Quo scenario. As with SFPP1, the primary reasons for this are: more aggressive implementation of energy efficiency measures, reduced cost of capital (less profit), reduced administrative expense(less executive compensation), rapidly declining costs of wind, solar, and natural gas vs. the escalating costs of coal-derived electricity, and reduced transmission needs.

SFPP Scenario 2- Percent SFPP Rates and Bills are less than Status Quo

	2015		2022		2028	
	Base Case	+ $100 Million	Base Case	+ $100 Million	Base Case	+ $100 Million
SFPP vs PNM Rates	17%	12%	8%	5%	18%	17%
SFPP vs PNM Bills	19%	14%	17%	15%	29%	28%

Low Income Rate Considerations: Same as Scenario 1.

Status Quo Scenario: PNM Continues to Own/Operate the Utility

This scenario assumes a continuation of PNM's ownership and operation of the utility.

Start-up and Distribution System Costs: none

Energy Efficiency: PNM is legally obligated by New Mexico's Efficient Use of Energy Act (EUEA) to achieve by 2020 10% energy savings from system-wide 2005 energy usage through energy efficiency programs. Since the EUEA 10% requirement is based on 2005 usage and doesn't increase with customer meter growth, the effective or actual energy efficiency rate under the EUEA is less than 10% of current year usage. This scenario assumes that this level is achieved and remains constant beyond 2020. However, it is important to acknowledge that, due to certain cost effectiveness tests in the EUEA, it is conceivable that the EUEA requirement will not be met in 2020.

Energy Portfolio: Over the 20-year analysis through 2033, PNM will continue to meet Santa Fe's electricity requirements through a combination of coal, nuclear, natural gas-based sources, and renewable energy as defined, and limited in some cases, by regulatory requirements.

PNM is legally required to achieve a fuel mix of 15% renewable energy in 2015 and 20% in 2020 by New Mexico's Renewable Energy Act (REA). Regulatory oversight and enforcement of the REA is the responsibility of the New Mexico Public Regulation Commission (PRC). This scenario assumes that these levels are achieved and that renewable energy would remain at 20% beyond 2020. Note, however, that due to the REA's large electric consumer cost cap

provision, the actual or "net" renewable energy in PNM's mix will be less than the 15% and 20% noted above -- possibly more like 13.5% and 18%, respectively.

In addition, the REA has a "reasonable cost threshold" (RCT) provision that allows electric utilities to not meet the 15% and 20% requirements if their renewable energy costs exceed the RCT. The RCT provision has been used by utilities to try to justify providing less renewable energy than the minimums required in the REA. The following table from PNM's 2011-30 Integrated Resource Plan (IRP) summarizes its long-term generation portfolio. The actual percentage of renewable energy that PNM has in its generation portfolio in 2015, 2020 and beyond is, therefore, heavily dependent on the future actions of the PRC in its role as the enforcer of the REA - - creating significant uncertainty surrounding whether the REA's minimum requirements will even be achieved. No such renewable energy generation uncertainty would exist in either SFPP scenario.

Status Quo – Generation Portfolio 2013-2033

	2013	2018	2020	2033
Natural Gas, Coal, and Nuclear	90.0%	85.0%	80.0%	80.0%
Solar	2.0%	3.0%	4.0%	4.0%
Wind	8.0%	10.5%	14.0%	14.0%
Non Wind or Solar	0.0%	1.5%	2.0%	2.0%
Customer-Scale/Distributed Gen.*	0.2%	0.5%	0.6%	0.6%
% Renewables	10.00%	15.00%	20.00%	20.00%

*Customer-Scale/Distributed Gen. are not added to total % Renewables, they are counted in Solar

Economic Development: In this scenario, only 2% of electric generation is locally sourced in 2013 and assumed to come from customer-scale solar. The local share rises to 4% in 2033. However, as part of its REA requirements, PNM has constructed 5-10 megawatt solar farms around its service territory in the past few years and while none of these facilities has been located in Santa Fe County in the past, it is possible that PNM will site one locally in the coming years. If this occurs, it would stimulate, of course, additional local economic development for this scenario.

Rate/Bill impacts: Rates in the Status Quo scenario are assumed to continue to increase in line with historical increases, 2.66% annually for residential bills and 1.97% for commercial rates. Bills also increase, adjusted for energy efficiency savings.

Conclusions and Next Steps Options

Although this economic feasibility assessment of Santa Fe Public Power is preliminary in scope, the analyses conclude that the formation of such a utility could yield significant energy, economic, and environmental benefits for electricity consumers and the region as a whole. Given these preliminary findings, it is reasonable to suggest that the concept of a publicly-owned electric utility in Santa Fe deserves further consideration and evaluation by area policymakers.

Among steps needed to advance an inquiry of SFPP's feasibility to the next level are the following:

1) Public/Community Education and Outreach and Public Opinion Assessment - A variety of public education and outreach strategies should be initiated to determine the extent to which Santa Fe citizens are aware of the region's current electric power environment (e.g. percent of power generated from traditional and renewable sources, greenhouse gas emissions, state laws regarding renewable energy and energy efficiency, historic rate increases, etc.) In conjunction with the education and outreach efforts, a variety of public opinion strategies (opinion surveys, town halls, City and County web site feedback, etc.) should be implemented to assess citizens' feelings around energy, environment and electric utility issues.

   For instance, a representative sample of Santa Fe citizens across Santa Fe's diverse economic, geographic and cultural base should be polled to determine their attitude toward the existing electricity provider and the service it provides, contribution to global climate disruption, long-term electric utility expenditure concerns, etc.

   Questions and public feedback related to the continued use of coal and nuclear for power generation, the availability of Santa Fe's solar and wind resources, for local economic development and job creation and whether current and projected electricity rates are viewed with concern, are central to public considerations for pursuing Santa Fe Public Power. Responses to public opinion initiatives will help guide future steps. If the sampling response is positive to the underlying concept, then a properly funded and organized public education campaign may be warranted as a means of building public understanding of and support for SFPP.

2) Refinement of Costs - The preliminary assessment needs to be augmented with a much more refined, technical-level engineering analysis of PNM's load profile in the County, the location, age and condition of PNM's distribution system, and the real extent to which SFPP could acquire and pay for a sustainable power supply sourced entirely from natural gas, solar and wind. Whether this plan could actually be implemented with long-term Power Purchase Agreements in the wholesale market and a small core professional staff to plan and manage SFPP's load, with outsourced operation and maintenance (O/M) and administration services, deserves careful scrutiny.

3) PNM's Role – SFPP Scenarios 1 and 2 assume that PNM could be engaged by local policymakers to determine the company's attitude toward a cooperative venture with the City and County. Areas to be addressed might include a lease or lease/purchase of the distribution system, an O/M contract with PNM, and outsourced customer service and billing functions. In this regard, the availability of wholesale renewable energy and transmission capacity from PNM would also be important to clarify. The alternative course of action is a condemnation proceeding by the County/City, possibly requiring five years in the state court system, which is described in Appendix B of the main report.

4) Availability of Energy – There is a need to further investigate and characterize wholesale energy markets for near-term availability of natural gas-derived electricity and renewables. Turnkey developers and suppliers should be consulted on the cost and availability of long-term supply contracts for Santa Fe in the range of 100 MW of daily capacity. A technical review of the regional transmission system for capacity constraints, including projects under development, should also be considered.

Santa Fe Public Power may make sense as an alternative to PNM in order to secure a faster transition from coal to an electric power generation mix comprised entirely of natural gas and renewables, with greater rate stability for consumers, absent the need to make a profit for stockholders, and less expensive administrative overhead. Of course, one of the prime benefits associated with SFPP (especially Scenario 2's locally-sited electric generation resources) is its potential to dramatically stimulate economic development and job creation in the region.

The key is to determine the practicality of such a move, largely determined by the level of public interest and political support, including the ability of a SFPP-type entity to finance and carry start-up and acquisition costs, and, whether clean energy is cost-competitively available in the wholesale market and deliverable to Santa Fe. A broad-based, but more thorough technical analysis of the envisioned SFPP service area's actual power demand, the distribution infrastructure in place, and financial capacity of the local market is needed to help answer these questions.

Main Report

1. Santa Fe Market Assessment

1.1. Demand and Load Profile

For all three scenarios analyzed in this report, projected energy usage is estimated to be 810,000 MWh in 2013, with average daily energy usage of over 2,200 MWh and a customer base of 56,000 residential and commercial meters. In 2013, the base demand (or "load") is 80 MW, with a peak demand of 160 MW (generally occurring in the summer with the impact of refrigerated air conditioning). Base load demand represents the minimum amount of electricity required by Santa Fe customers at any given time.

Santa Fe's electricity usage experienced annual growth of 2.4% from 2000 through 2009. Santa Fe's monthly usage of 581 kWh per residential account has remained fairly static, and below the system-wide PNM average of 630 kWh, owing to smaller dwelling sizes and greatly reduced use of air conditioning, compared to Albuquerque, for example. Monthly commercial usage of 6,480 kWh per account in Santa Fe is slightly less than the system-wide PNM average of 6,571 kWh monthly.

The load is approximately 45% residential and 55% commercial (including institutional users such as government and schools), with a negligible amount of power used for industrial purposes. In terms of the number of new customers on the system, PNM forecasts residential meter growth of 1.2% per year and commercial growth of 0.9%, in its 2011–30 Integrated Resource Plan (IRP).

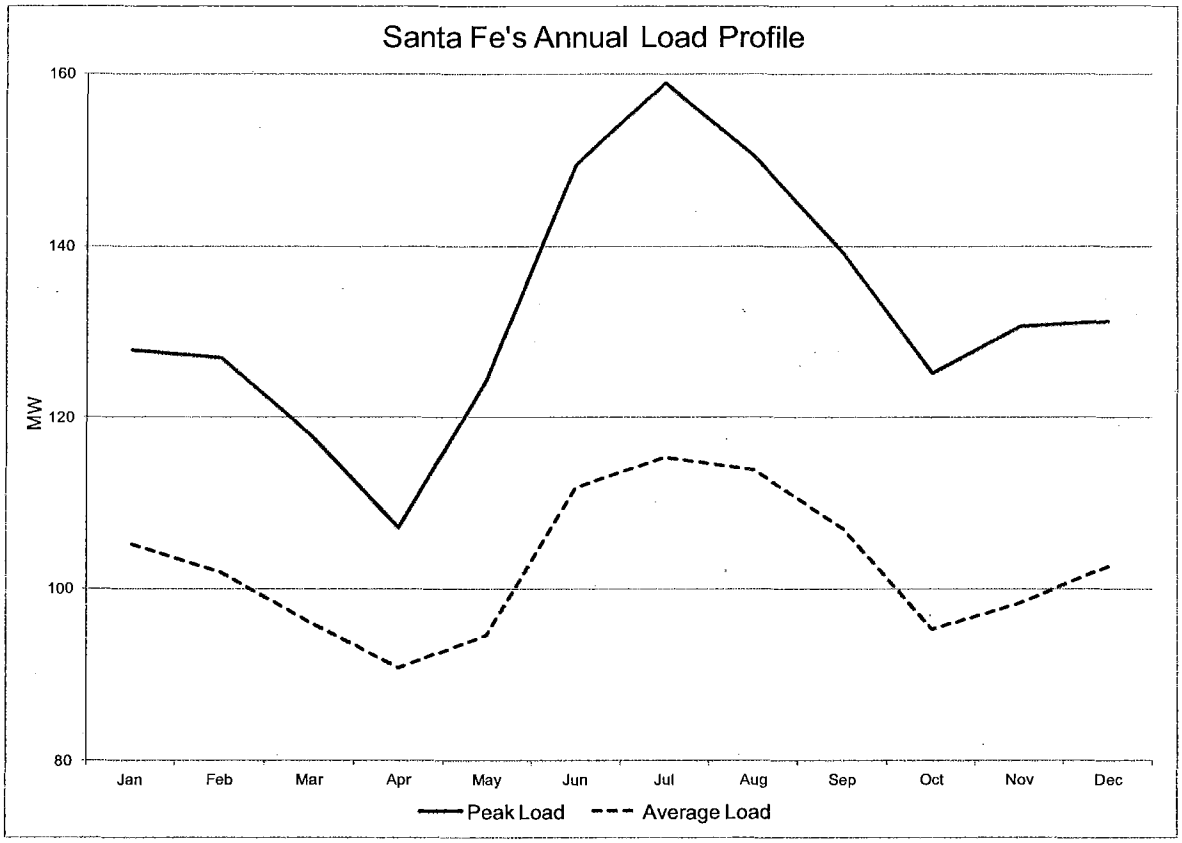

Figure 1: Santa Fe's Peak and Average Monthly Load Profile (2010)

1.2. Usage and Retail Rates

PNM services about 505,000 metered residential and industrial customers in New Mexico, with total annual energy sales of 12,017,000 MWh – approximately 15 times the demand of the City/County-owned utility service area assumed in this report. As of 2011, PNM maintained a total of 2,347 MW of generating capacity, of which 992 MW is coal-based. PNM is subject to the rate-setting authority of the New Mexico Public Regulation Commission, and for oversight of transmission facilities and rates, by the Federal Energy Regulatory Commission (FERC).

From 2000 through 2010, PNM's rates increased on average by 2.66% and 1.97% per year for residential and commercial customers, respectively. Importantly, PNM's average residential rates increased over 40% from year-end 2007 to 2011, compared to an average of 6.9% among other investor-owned utilities in New Mexico and 1.4% among the State's municipal power utilities, in Los Alamos, Raton, Farmington, Aztec, Springer, Gallup and Truth or Consequences (based on EIA electricity sales data). The following table summarizes PNM's growth in retail rates during the previous ten years. Actual historical rates for PNM's residential and commercial customers are also summarized in Table 6, in Section 3.7 *Impact on Electric Customers.*

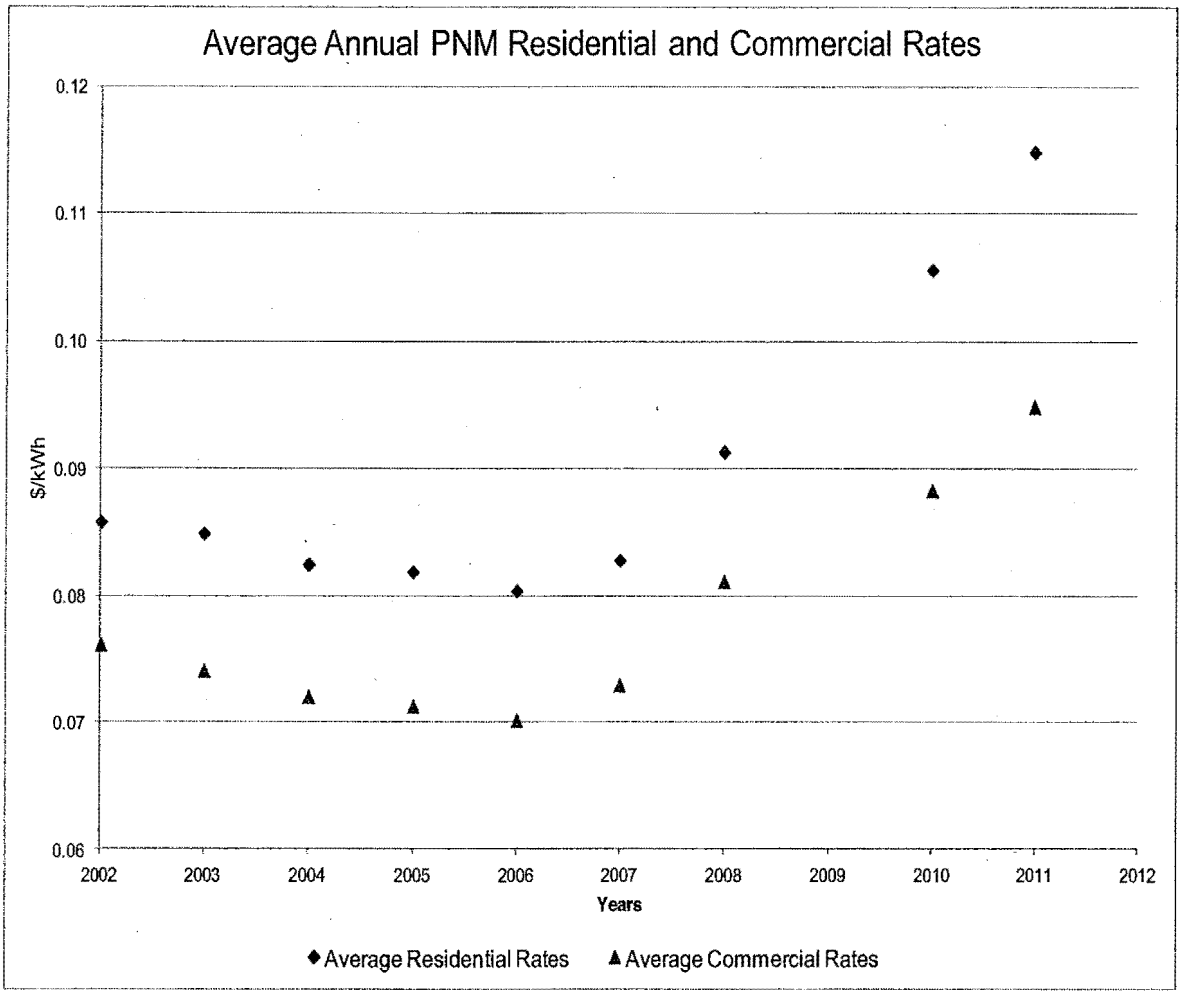

Figure 2: Average Annual PNM Residential and Commercial Rates*

*Based on total revenue divided by total electricity sales for PNM, as reported by the U.S. Energy Information Administration (EIA).

1.3. Socio-Economic Demographics

The City and County of Santa Fe are separately governed jurisdictions in northern New Mexico with some 144,000 residents, of which over 76,000 reside in the County (outside the City of Santa Fe), with another 68,000 people in the City. Hispanics and Native Americans constitute nearly 50% of the population. Santa Fe is the state capital, with a large number of state agencies and a sizeable base of public employment in the region. In addition to state and local governments, major employers include Santa Fe Community College, which serves some 6,000 full and part-time students, and Christus St. Vincent Regional Medical Center.

The Los Alamos National Laboratory is an economic and technology centerpiece for northern New Mexico, with employment of 8,000 professional and administrative staff

throughout the region.

Santa Fe is well-known for an affluent retirement population and second homes for executives from throughout the U.S. The city is also a popular tourist destination, with a wide variety of hotels, restaurants, and galleries.

Much of Santa Fe's economy is also labor-based, with extensive minimum wage employment in the retail and service industry, and part-time employment in the construction industry, with specialty contractors and firms, in landscaping and home improvement, for example. The professional employment base is limited mainly to state and local government, higher education, public and private schools, management of small commercial firms and retail, real estate sales and leasing, accounting and law firms, and independent consultants.

On a County-wide basis, Santa Fe's population grew by 11.06%, compared to 13.09% growth in New Mexico over the period 2000-2010. Although Santa Fe experiences a high/low income extreme in a culturally diverse population, the County's median annual household income is $42,207, slightly lower than the state's average median household income of $43,820.

2. Formation of Santa Fe Public Power

2.1. Statement of Purpose/Objectives

As noted in the Executive Summary, this preliminary assessment identifies and analyzes key economic considerations that might support the formation of Santa Fe Public Power. For purposes of this study, SFPP would be jointly-owned and governed by the County and City – not unlike the City/County Buckman Direct Diversion water project and the Santa Fe Solid Waste Management Authority.

Included in this study are data and a number of variables affecting the viability of SFPP, such as electricity sales and trends in the service area, start-up and system acquisition costs for the utility, 20-year market potential , and forecast electricity rates and bills in comparison to the Status Quo. Importantly, the analysis carefully examines the economic costs and environmental benefits of sharply increased use of renewable energy sources and an aggressive energy efficiency standard impacting the region's demand for power.

The study suggests that a public electric utility for Santa Fe County and City of Santa Fe, with a combination of natural gas and utility-scale renewable energy-sourced power, and extensive customer-scale renewable and energy efficiency programs, can be cost-effective, and will significantly reduce water usage, pollution and carbon emissions, while maintaining a high level of system reliability.

The public utility would initiate operations by buying wholesale power, and with aggressive incentives for a larger base of customer-scale renewables, create local economic benefits that are likely much greater than what the Status Quo would generate. The public utility would also

implement more aggressive energy efficiency programs that would reduce consumers' electric bills and generate local jobs.

2.2. Legal Framework

While not part of the scope of work for the study, a legal framework is necessary to enable SFPP, and is addressed in Appendix B.

2.3. Organization and Operation of SFPP

The operational character of SFPP is in part drawn from the experience of other municipalities. New Energy Economy and the consultant team have drawn heavily on public power feasibility assessments for other cities, but particularly on Boulder, Colorado's resources and experience. The City of Boulder is in the process of municipalizing Xcel Energy's (the existing private investor-owned utility serving Boulder) local electricity distribution service. Although Boulder proposes to form a city department, SFPP would rely on a Joint Powers Agreement by the City and County, and contract services for O/M and billing/customer service, it should be understood the scope and size of Boulder's effort is similar to such an undertaking in Santa Fe.

2.3.1. Core Professional Staff

As a Joint Powers Agency, SFPP would function under a governing board composed of County and City officials, or their appointees, with a general manager and core professional staff to plan and manage the power load and distribution infrastructure for the service area.

SFPP staff would work with specialized software to forecast load requirements with historical "8760" hourly usage and seasonal information and advise PNM, as the regional balancing authority, of expected load and peaking requirements on a running 48-hour-ahead basis. SFPP's energy supplier would also interface with PNM on a regular basis to coordinate the delivery of power and interconnection to and through PNM's transmission system to the Santa Fe distribution network at selected substations for metering and transfer purposes.

In addition to load planning and management, SFPP staff would plan capital maintenance and improvements to the system, undertake financial planning, and handle all contractual arrangements with energy suppliers, vendors, and project partners. Outside legal counsel and a financial advisor would be retained at additional cost to assist SFPP's General Manager and governing board as needed.

2.3.2. Contract O/M of the Distribution System

SFPP would seek to contract with PNM for O/M of the distribution system, with personnel, equipment and a depth of technical information and system knowledge already in place. The assumed cost for O/M is $3.5 million annually for a system with 56,000 customers. Boulder estimates an annual cost of nearly $3 million for O&M of a comparably sized distribution system, but with a customer base of 45,000 meters.

2.3.3. Contract Customer Service/Billing

SFPP would also pursue contracting with PNM for the use of the company's customer service and billing personnel and systems already in place for the Santa Fe service area. The annual cost for these services is assumed to be $3.4 million, with a growth rate of 2.0% annually.

3. SFPP Development Scenarios

The underlying premise behind SFPP is to implement a publicly-owned electric utility for Santa Fe County and the City of Santa Fe that can implement more energy efficiency, utilize more renewable energy, use no coal or nuclear energy, and produce more economic benefits and lower bills for the consumers than continuing to utilize PNM as the service provider.

The strategy to achieve these objectives is to double the current level of energy efficiency-induced savings in SFPP, resulting in dramatic reductions in per customer usage and a declining and flat load for SFPP through 2028, as noted in Figure 3. The second part of this plan is to rapidly expand the use of renewables to 45% of total generation by 2028 – more than twice the amount of renewable energy required of PNM under state law. This level of renewables would be achieved through an aggressive combination of utility-scale and customer-scale (e.g. roof-top solar photovoltaic systems) renewable energy development.

3.1. Energy Efficiency

For SFPP Scenarios 1 and 2, efficiency gains are defined as the annual reduction in per customer usage in kWh. Both SFPP scenarios utilize an "Aggressive Energy Efficiency Standard" equating to a per customer energy usage reduction of 15% in 2020 increasing to 20% by 2028, using 2013 as the base year. Beyond the year 2028, per customer energy usage is assumed to be constant. The only increase in total energy usage is attributable to the growth in the number of customers on the SFPP system (1.2% and 0.9% per year for residential and commercial customers, respectively). The cost incurred by SFPP to implement the Aggressive Energy Efficiency Standard is assumed to be 2.6¢/kWh, based on a 2012 Southwest Energy Efficiency Project report.

Under the Status Quo Scenario, where PNM continues to own and operate the utility, it was assumed the company will meet the efficiency requirements in the New Mexico Efficient Use of Energy Act (EUEA). The EUEA requires utilities to realize per customer electric usage reductions of at least 10% by 2020 based on 2005 retail sales.

3.2. Customer-scale Solar

To further reduce demand on Santa Fe Public Power's system, aggressive customer-scale solar generation incentives were included in the model. It was assumed Santa Fe Public Power will pay customers 14¢ for each kWh of customer-scale solar energy generated between 2013 and 2033. The 14¢/kWh incentive is the combination of the net metering benefit (i.e. the retail electric rate being charged at any given time) and a production-based incentive (similar to PNM's existing Renewable Energy Certificate payment incentive).

Sensitivity of SFPP rates was also analyzed with a customer-scale solar incentive of 20¢ per kWh. Compared to 14¢ per kWh, a 20¢ per kWh incentive would increase residential rates by approximately 5% in 2033, from 14.8¢/kWh to 15.6¢/kWh. The tables below compare SFPP rates and bills in Scenarios 1 and 2 with a 20¢/kWh REC, relative to PNM's forecast rates and bills in 2028.

Table 1: Scenario 1 - Percent SFPP Rates and Bills are less than Status Quo, with a 20¢/kWh Customer-Scale Solar Incentive

	2028	
	Residential	Commercial
SFPP vs PNM Rates	14%	15%
SFPP vs PNM Bills	26%	27%

Table 2: Scenario 2 - Percent SFPP Rates and Bills are less than Status Quo, with a 20¢/kWh Customer-Scale Solar Incentive

	Residential	Commercial
SFPP vs PNM Rates	14%	13%
SFPP vs PNM Bills	26%	25%

Customer-scale renewable generation for SFPP Scenarios 1 and 2 will reach 7.5% of total electric generation in 2020, increasing to 11.25% in 2028, and remaining flat thereafter. Table 3 illustrates the 44 MW capacity of customer-scale solar required to provide 11.25% of total generation in 2028 (85,057 MWh) with a capacity factor of 22%. Customer-scale wind generation is not assumed in any of the three scenarios analyzed. However, none of the scenarios would preclude small-scale wind generators from meeting a portion of the customer-scale renewables generation objective, depending on whether and how the City and County choose to support and regulate such facilities.

Table 3: Proposed Customer-Scale PV in 2028

2028 Customer Scale Solar Energy	11.25%
2028 Customer Scale Solar Energy (MWh)	85,057
Customer Scale Solar Capacity Factor	22%
Customer Scale Solar Capacity (MW)	44
System Losses	1.2
Total Customers in 2028	67,807
Solar Capacity per Customer (kW_{DC})*	0.8

*Includes all residential and commercial customers

3.3. Net Annual Electric Demand

The significant impact SFPP's Aggressive Energy Efficiency Standard and customer-scale solar generation have on reducing annual utility electric generation needs is illustrated below in Figure 3. Relative to the PNM-Status Quo scenario, SFPP has the potential to reduce its generation needs by approximately 3,000 gigawatt-hours (a gigawatt-hour is 1000 MWh)

through 2033, with the implementation of an Aggressive Energy Efficiency Standard and customer-scale solar program.

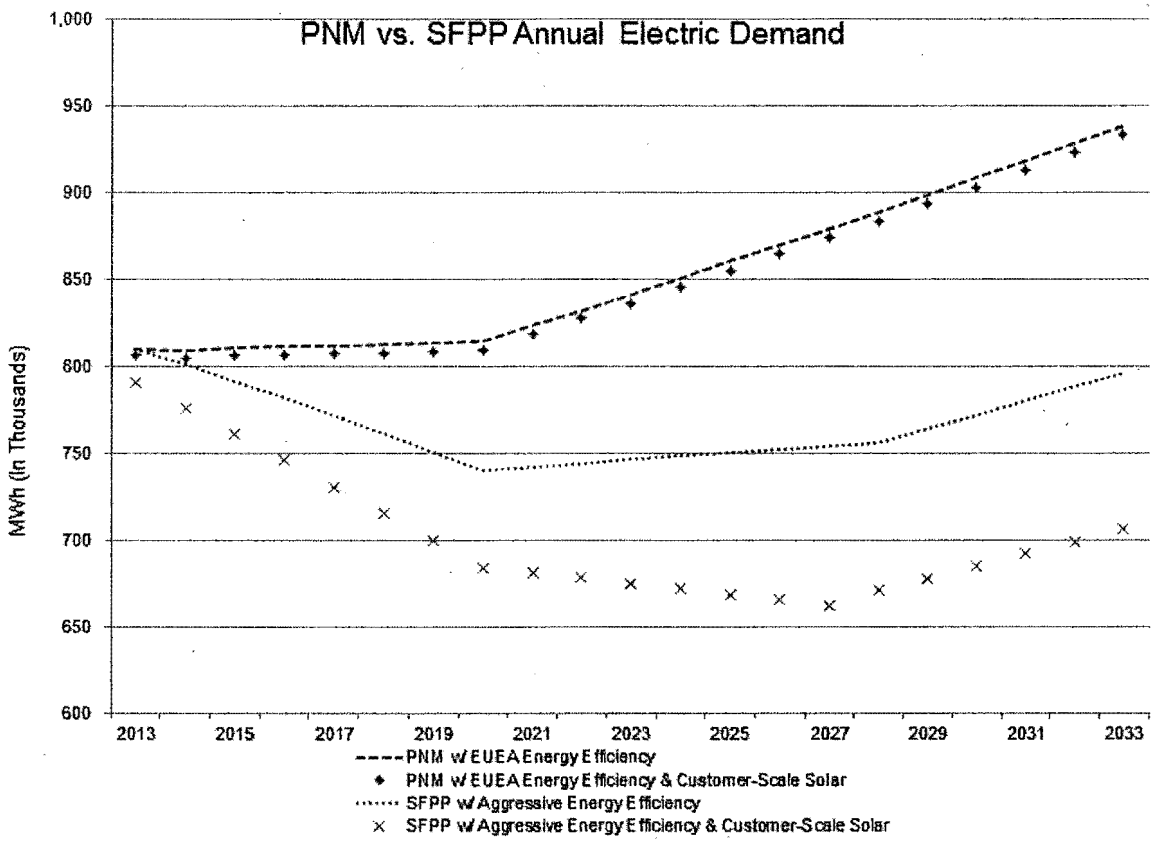

Figure 3: PNM- Status Quo vs. SFPP1 and 2 Annual Utility Electric Generation Needs

3.4. SFPP Scenario 1: Wholesale Purchased Power

Santa Fe Public Power will purchase power in the market, acquiring energy from a portfolio made up of natural gas and renewables (including customer-scale solar). Energy purchased wholesale will be secured on the open market and through long-term power purchase agreements, and wheeled to Santa Fe over regional transmission systems. There is considerable potential in this market for securing natural gas, wind, and solar power from independent power producers, located in New Mexico. It is assumed the delivered cost of energy (including transmission) is 5, 5, and 8 cents/kWh for natural gas, wind, and solar, respectively.

The generation portfolio for Scenario 1 consists of 25% renewables (utility-scale and customer-scale) in 2013, increasing to 45% in 2028. Utility scale solar is assumed to remain constant at 5% while purchased wind energy and customer-scale solar generation increase to 29% and 11%, respectively. The percentage of natural gas falls from 75% in 2013 to 55% in 2028.

SFPP will staff a 5 to 7 member group of professionals to provide load system planning and management, interfacing with energy suppliers and the balancing authority (PNM) to be sure all hourly loads are met. This work can be done remotely with advanced load management and planning software. A third party contractor will handle billing and customer service. SFPP's newly acquired distribution system will have to be maintained, which will also be contracted out to a third party. A detailed pro forma financial statement that highlights all of SFPP's operating expenses associated with Scenario 1 can be found in Appendix C.

3.5. SFPP Scenario 2: Purchased Power and Self Generation

SFPP will transition to a combination of generated and wholesale power in 5-7 years, following a period of market development in Santa Fe, institutional maturity, and the onset of a strong cash flow position for purposes of financing generation assets. Generation options include a joint venture combined cycle natural gas plant with at least two other utilities in the region, and a utility scale solar facility.

The generation portfolio for Scenario 2 is comprised of 30% renewables in 2013, increasing to 45% in 2028. All energy, excluding customer scale solar, will be purchased until 2020 when a 200 MW natural gas combined cycle plant will come on-line, of which SFPP will own 33%, providing 66 MW capacity to the Santa Fe region. Additionally, in 2022 60 MW of utility-scale solar photovoltaic facilities will be built within Santa Fe County. Wind powered energy will continue to be purchased through either PPA agreements or on the wholesale market. SFPP1 and SFPP2 do not assume any utility-scale wind facilities will be constructed in Santa Fe County. However, neither Scenario precludes such development in the County, should a wind developer propose and the County chooses to approve a wind farm. During times of peak demand that cannot be met with SFPP generating assets, additional wholesale energy will be purchased.

The costs associated with Scenario 2 are identical to Scenario 1 until SFPP-owned generation begins in 2020. Scenario 2 incurs additional variable and fixed O/M costs for the natural gas plant (2020) and solar facility (2022), transmission and fuel costs for the natural gas facility, and debt financing costs. A detailed pro forma financial statement for Scenario 2 can be found in Appendix D.

Table 4: SFPP's Generating Assets Specifications

Generating Facility	Capacity (MW)	Capacity Factor	Capital Cost ($/kW)	% Ownership
NGCC Plant *	66	0.85	978	100%
Utility Solar	60	0.25	2250	100%

Table 5: Financing Terms for SFPP's Generating Assets

Generating Facility	Installed Capital Cost ($000's)	Term (Years)	Financing Rate	% Ownership	Annual Payment ($000's)*
NGCC Plant	$ 195,600	20	3.50%	33%	$ 4,588
Utility Solar	$ 135,000	20	3.50%	100%	$ 9,499

* Annual payments for the 200 MW NGCC plant represent 1/3 ownership by SFPP

3.6. Status Quo: PNM Continues to Own and Operate the Utility

For comparison purposes, the analysis assumes a continuation of PNM's ownership of the Santa Fe region distribution system. Projected revenue growth and rate increases are in line with PNM's 10-year historical average for residential and commercial customers. Over the 20-year analysis, PNM will meet Santa Fe's electricity requirements through a combination of coal-based sources, insofar as EPA regulations permit, nuclear power, natural gas, energy efficiency, and a growing level of renewables to meet the New Mexico Renewable Portfolio Standard (RPS) Rule. Although the 2011 PNM Integrated Resource Plan, which has not been accepted by the PRC at the time of this report, indicated that PNM would achieve only 13% of its energy from renewable sources by 2030.The RPS Rule stipulates PNM must provide:

- No less than 10% of retail energy needs for calendar years 2011 through 2014
- No less than 15% of retail energy needs for calendar years 2015 through 2019
- No less than 20% of retail energy needs for calendar year 2020 and subsequent years

3.7. Impact on Electric Customers

The projected rates charged by SFPP are highly competitive relative to PNM's projected retail rates. Break-even rates allow SFPP to generate just enough revenue to cover all operating costs, without the need to make a profit associated with a business enterprise. Rates for SFPP can be found in Appendix F. Based on 10-year electricity sales and revenues, PNM's average retail rates are assumed to increase annually by 2.27%, compared to SFPP's projected annual rate increase of 2.17%. The difference in residential and commercial rates and monthly bills, relative to PNM, is evident in Figures 4 through 7 below.

Table 6: PNM's Historical Revenues, Sales, and Rates

Year	Residential Revenues ($1,000)	Residential Sales (MWh)	Average Residential Rates ($/KWh)	Commercial Revenues ($1,000)	Commercial Sales (MWh)	Average Commercial Rates ($/KWh)
2001	187,600	2,197,889	0.085	242,372	3,213,208	0.075
2002	197,739	2,305,731	0.086	248,510	3,264,754	0.076
2003	203,435	2,397,946	0.085	267,220	3,607,825	0.074
2004	205,989	2,498,339	0.082	265,690	3,689,383	0.072
2005	217,871	2,661,485	0.082	266,982	3,746,653	0.071
2006	221,409	2,754,614	0.080	271,868	3,875,630	0.070
2007	265,717	3,210,651	0.083	309,468	4,240,967	0.073
2008	293,554	3,214,333	0.091	348,110	4,290,442	0.081
2010	355,844	3,370,247	0.106	377,062	4,270,648	0.088
2011	385,589	3,356,625	0.115	409,714	4,318,165	0.095

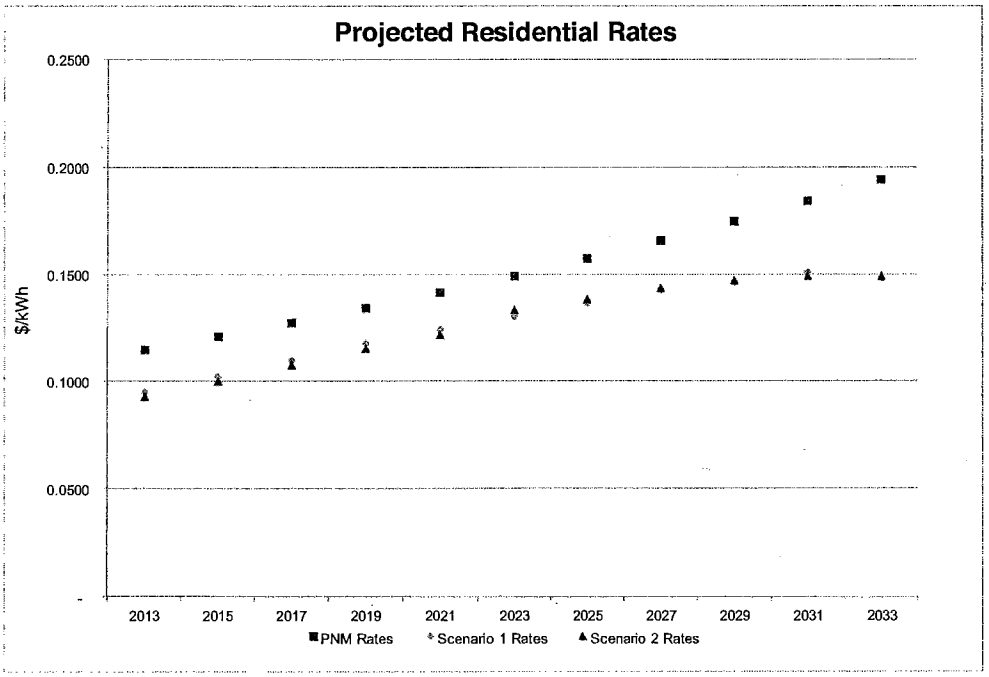

Figure 4: Projected Average Residential Rates

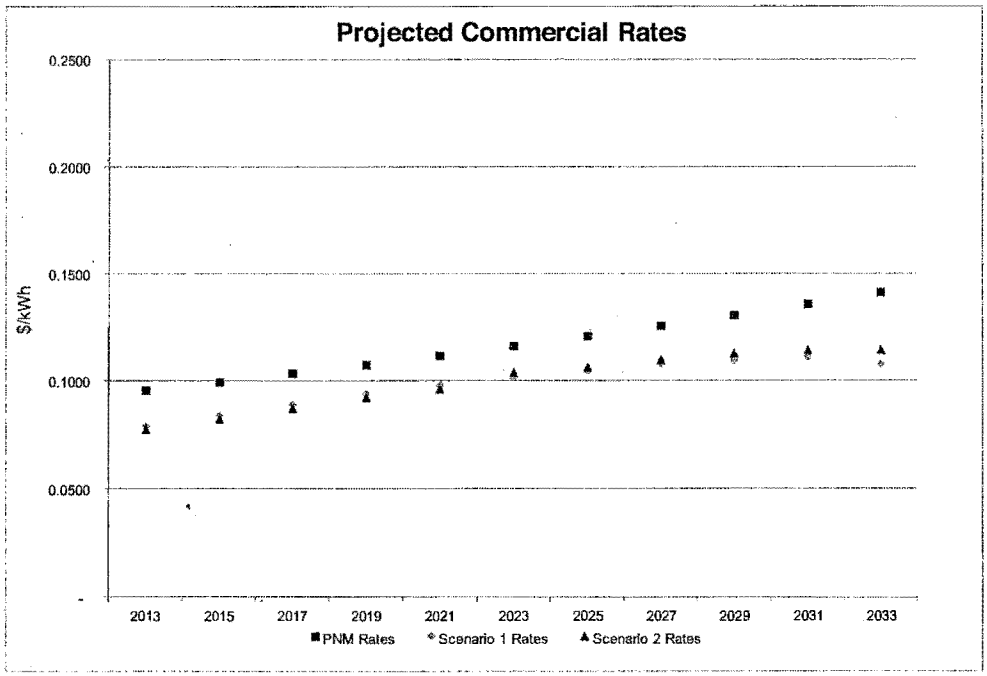

Figure 5: Projected Average Commercial Rates

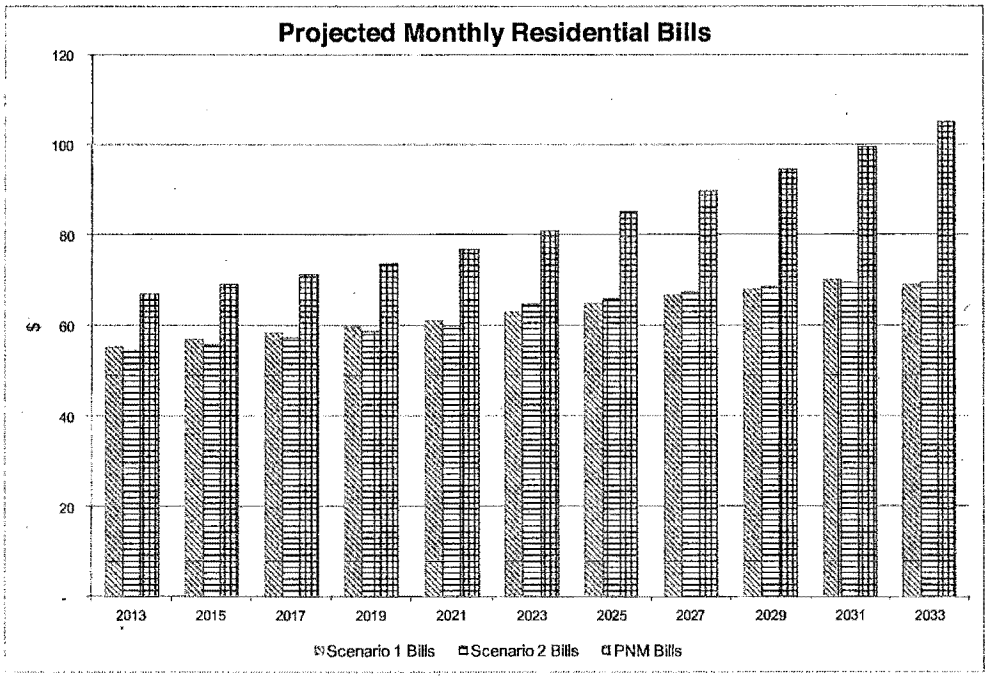

Figure 6: Projected Monthly Residential Bills

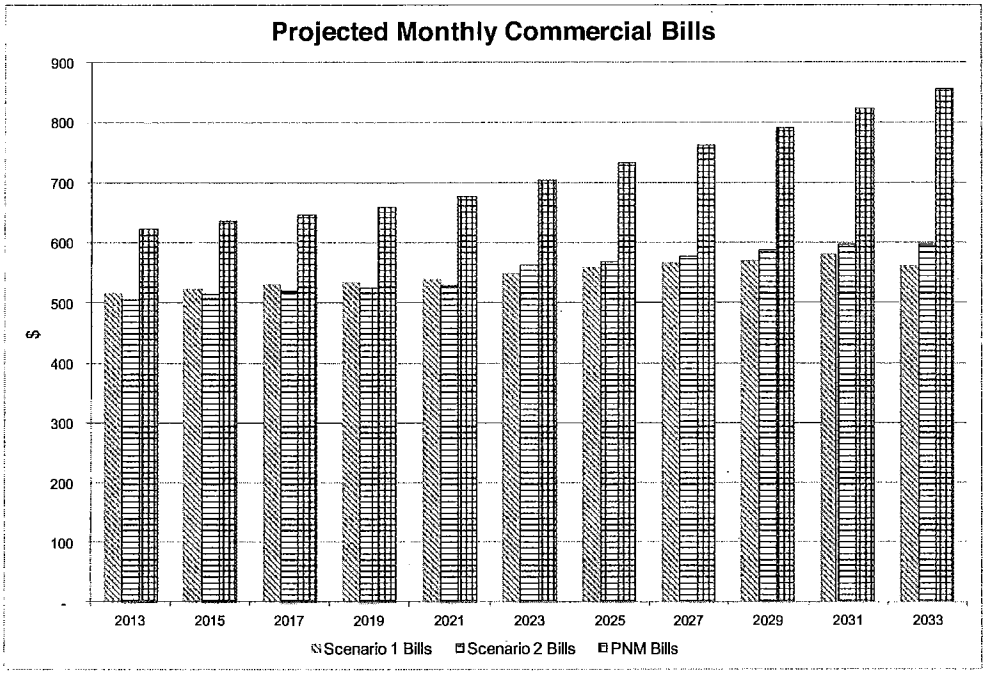

Figure 7: Projected Monthly Commercial Bills

4. Financial Analysis

This section describes the key elements of SFPP's revenue and expense profile, with a summary of the utility's start-up capital costs and projected revenues and expenses through the 20-year analysis. Described in the following sub-sections, SFPP is assumed to incur total expenses of $155 million for system acquisition and start-up and will finance these through a combination of taxable and tax-exempt debt. As a sensitivity analyses, a SFPP vs. Status Quo rate and bill comparison was also performed using SFPP start-up and system acquisition costs totaling $255 million (i.e. an additional $100 million). That comparison is provided on page ii of the Executive Summary.

4.1. Revenues

Beginning in 2013, revenues are expected to be $69.93 million for Scenario 1 and $68.06 million for Scenario 2, with an expected 2.0% annual growth rate, attributable to rate increases, expansion of the customer base, and load reduction as the result of a large build-up in customer-scale solar and an aggressive energy efficiency standard in the SFPP service area. SFPP2's initial rates and revenues are slightly lower than SFPP1 as the result of lower cost purchased wind in the fuel mix. This circumstance begins to reverse over time, with the onset of local generation in SFPP2 beginning in 2020.

Santa Fe Public Power will incur normal utility operating expenses for purchasing and generating power, O/M of facilities, and management and administration of the organization. In this study, SFPP's residential and commercial rate structure is intended to recover all operating expenses, minimize negative net cash flows, without the need for profit to fund a return on investment for shareholders. SFPP revenues and expenses are summarized in Tables 7 and 8 in Section 4.4.

4.2. Distribution System Acquisition Expenses

SFPP would be faced with the acquisition cost of PNM's distribution system. The cost could be determined by appraisal and range from its declared book value of $65 million to replacement cost estimated to be $106 million. In order to not underestimate acquisition costs, the higher $106 million figure was used. The replacement cost and book value of PNM's entire distribution system were referenced from PNM's 2011 FERC Form 1. Santa Fe's portion of PNM's 2011 revenues (9.2%) was applied to approximate the value of the distribution system serving Santa Fe County.

4.3. SFPP Start-Up Costs

As discussed in Section 5.2, Santa Fe Public Power is projected to incur costs for start-up that could realistically reach $49 million. With unforeseen legal and regulatory costs and credit requirements for purchased power, these costs could increase to $100 million. The cost estimates that follow have been developed from actual experience with similar municipal utilities, or from feasibility assessments for prospective entities. Start-up costs in Boulder with a projected electric load 40% greater than in Santa Fe are estimated to exceed $100 million, *excluding* the cost of system acquisition.

Distribution Grid Separation Cost - $17.6 million
Physical separation of PNM's in-County electrical distribution system from its grid would be necessary for SFPP to separately meter and service customers formerly part of the integrated PNM transmission and distribution system. According to a 2008 technical report and cost analysis by Cibola Engineering for Santa Fe County, severance of the system will require two new substations and the acquisition of an existing PNM substation by SFPP, along with the construction of 40 miles of new feeder lines, 45 new feeder switches, and several miles of new 115-kV transmission line.

Facilities and Supply Cost - $4 million
Start-up of the utility will require the acquisition of office facilities and a supply inventory of furniture, equipment and materials to support administration, customer service, and maintenance operations.

Legal and Engineering Fees - $3 million
Assuming the utility is able to avoid litigation at its inception, the City-County will incur legal and engineering fees to establish SFPP. . These services include applications for federal authorities for regulatory purposes, wholesale account applications, bonding, utility charter, asset survey, and utility operations for metering, billing and scheduling.

Operations/Maintenance Reserve - $2.5million
SFPP will need an operations/maintenance reserve account at start-up for unforeseen system repair and maintenance events.

Reserves and 5 months Transmission Costs - $22 million
Through an operations reserve, SFPP will be required to demonstrate creditworthiness with wholesale counterparts and market suppliers before entering into purchase power agreements (PPA). The energy and transmission reserve must meet industry requirements. The reserve will require funds for energy reserves and 5 months of transmission costs.

4.4. Bond Financing Requirements

The total amount to be financed includes start-up and distribution system acquisition costs. If the municipal utility finances $49.1 million in start-up costs and if a lease/purchase cannot be arranged with PNM, a one-time payment of $106 million for the distribution system will result in separate bond issues totaling $155 million.

Taxable revenue bonds issued for the acquisition of the distribution system at a cost of $106 million are assumed to have a life of 20 years, requiring single annual payments at a rate of 4.0%. Start-up costs of $49.1 million are eligible for tax-exempt bond financing, which in this case is estimated to be available in the current market at 3.5% with amortization over 20 years. The two financings combined produce a blended annual debt service payment of $11.267 million.

For SFPP2, the addition of 66 MW of SFCC-owned natural gas combined-cycle generation in 2010 would add $65.2 million in tax-exempt debt to the cost of SFCC's generation portfolio and

60 MW of locally-sited utility-scale solar in 2022 would add another $135 million in capital cost. Combined annual debt service for the SFPP generation facilities would be $14.1 million over 20 years, reflected in total debt service for SFPP2 of $25.353 million in 2022.

4.5. SFPP Operating Budget

The American Public Power Association's 2010 industry standard for calculating total operating expense, excluding energy supply for public utilities with 50,000 to 100,000 customers is $363 per customer, equating to $20.3 million annually for SFPP's 56,000 customers at start-up. The study's model for SFPP Scenario 1 and 2 estimates initial operating costs for SFPP of approximately $25 million, including amortization. In 2013 for instance, operating expenses for Scenario 1 total $69.248 million, which, when energy and transmission costs are excluded, equal $24.313 million. When significant energy efficiency costs and customer-scale solar incentives are also excluded in later years, net operating costs remain in the range of $20 million. Total system management costs for the core professional staff are estimated to be $2 million at the start. Billing and customer service at $60 per account per year would begin at approximately $3.4 million. These costs would escalate at 2.0% annually. See Tables 7 and 8 for more information. Detailed financial statements for Scenarios 1 and 2 can be found in Appendices C and D, respectively.

Table 7: Scenario 1 Operating Budget ($000's)

	2013	*2020*	*2022*	*2028*	*2033*
Revenues	**$69,930**	**$79,784**	**$83,591**	**$94,538**	**$100,721**
Operating Expenses	**69,248**	**79,150**	**82,984**	**93,958**	**88,497**
Energy & Transmission	*44,935*	*44,967*	*46,458*	*51,940*	*60,378*
EE/Customer-scale Solar Incentiv	*4,129*	*12,341*	*14,151*	*17,873*	*13,538*
Admin & Mgmt					
System Management	*2,000*	*2,297*	*2,390*	*2,692*	*2,972*
Billing and Customer Service	*3,417*	*4,258*	*4,534*	*5,476*	*3,150*
O/M of Distribution System	*3,500*	*4,020*	*4,183*	*4,711*	*5,201*
Debt Service P&I	*11,267*	*11,267*	*11,267*	*11,267*	*11,267*
Net Cash Flow	**$683**	**$633**	**$608**	**$579**	**$12,225**

Table 8: Scenario 2 Operating Budget ($000's)

	2013	2020	2022	2028	2033
Revenues	$68,606	$78,517	$86,162	$96,651	$104,067
Operating Expenses	67,908	77,555	84,701	95,597	88,265
Energy ,Transmission & Fuel	*43,595*	*35,726*	*29,055*	*34,179*	*40,081*
EE/Customer-scale Solar Incentive	*4,129*	*12,341*	*14,151*	*17,873*	*13,538*
Admin & Mgmt					
System Management	*2,000*	*2,297*	*2,390*	*2,692*	*2,972*
Billing and Customer Service	*3,417*	*4,258*	*4,534*	*2,853*	*3,150*
O/M NGCC & Solar Facility	*0*	*3,058*	*5,034*	*5,314*	*5,979*
O/M of Distribution System	*3,500*	*4,020*	*4,183*	*4,711*	*5,201*
Debt Service P&I					
Start-Up and System Acquisition	11,267	11,267	11,267	11,267	11,267
NGCC and Utility-Scale Generation	*0*	*4,588*	*14,086*	*14,086*	*14,086*
Net Cash Flow	$697	$962	$1,461	$1,054	$15,803

Note: Tables 7 and 8 do not reflect depreciation charges and credits, which are revenue neutral. Refer to Appendices C and D for detailed financial statements on Scenarios 1 and 2.

5. Growth of Renewables in Santa Fe

5.1. Transition from Coal to Wind and Solar, Supported by Natural Gas

A key objective in the formation of SFPP would be the opportunity for the region to experience a clear and more certain path from dependence on nuclear and coal-fired power and to a cleaner, sustainable portfolio of wind and solar, supported by natural gas. The Santa Fe area currently receives 60% of its energy from two coal-fired power plants that PNM owns in northwestern New Mexico. PNM owns 200 MW at the Four Corners Power Plant and 790 MW at the San Juan Generating Station. Both facilities are required to comply with regional haze requirements of the Clean Air Act in currently on-going compliance proceedings. PNM is required to spend approximately $69 million to upgrade pollution controls at the Four Corners Power Plant. Owners of the San Juan plant may likely have to spend $100's of millions in pollution controls or retire units to be compliant with Clean Air Act requirements. The New Mexico Environment Department has proposed that San Juan units 1 and 2 be retired by 2017. This energy would be replaced by natural gas. However, the outcome of the San Juan Clean Air Act compliance situation is unknown at this time, and, therefore, retiring coal-fired units at the San Juan Generating Station was not assumed in the Status Quo scenario.

Solar is perhaps the most promising renewable technology for local generation. There is a currently a steady yet comparatively slow growth in the customer-scale PV market in Santa Fe which displaces a fraction of PNM's load, but no utility-scale solar at present and no near-term plans for wind development in the County. The emergence of SFPP as a major customer and partner for large utility-scale solar projects in the County coupled with a much more aggressive pursuit of customer-scale PV projects would be a catalyst for the rapid, sustainable development of a renewable energy industry in the County of a much greater scale than is likely under the Status Quo scenario.

As a regulated electric utility monopoly in New Mexico, PNM is expected to meet state Renewable Portfolio Standards (RPS) pursuant to the New Mexico Renewable Energy Act (REA). Regulated utilities are currently required to satisfy 10% of electricity sales from renewable resources and have the option to do so through their own renewable generation facilities, purchase or "distributed" power produced from renewables, or the purchase of Renewable Energy Certificates (RECs) from other producers. The renewables percentage increases from 10% to 15% by 2015, and 20% in 2020. In 2012, PNM notified the state Public Regulation Commission (PRC) that it will not meet the requirements of a "fully diversified renewable energy portfolio" in 2011, nor will it meet the 10% of electricity sales requirement for renewable-sourced power, and may only meet a 6% renewable rate in 2012.

The combination of PNM's sizeable, undepreciated investment in San Juan Generating Station's coal units (creating a strong financial incentive for the utility to continue to utilize the coal plant as long as possible) and slowness to meet the state's RPS requirement, make it difficult to see how the Status Quo Scenario will result in achieving a large portfolio of clean energy for Santa Fe in the near future.

Both SFPP Scenarios are designed to achieve a portfolio made up of 70% natural gas and 30% renewables in 2020, and 55% natural gas and 45% renewables by 2028. This represents over 150% (45% renewable energy in SFPP vs. an actual renewable energy amount less than 19% in Status Quo) more renewable energy in the generation supply mix for SFPP than Status Quo.

5.2. Build-up of Customer Scale Solar PV Market in Santa Fe

Market experience has proven that the development of customer-scale solar PV is sensitive to the availability of tax credits and/or rebates, and in many cases some form of low-cost financing.

A federal income tax credit of 30% is available for homeowners who install solar systems. New Mexico also provides a 10% personal income tax credit (up to tax credit amount of $9,000) for residents and businesses (non-corporate), including agricultural enterprises, which purchase and install PV and solar thermal systems.

These tax credits are set to expire December 31, 2016. A taxpayer who installs a PV system *and* a solar thermal system may be eligible to receive a separate tax credit up to $9,000 for each system to allow project owners with limited tax liability to fully utilize the credit.

Existing Renewable Energy Certificate (REC) incentive payments, in combination with net metering, also play an important role in incentivizing the purchase of PV systems for consumers. Unfortunately in New Mexico, the value of the per kilowatt-hour PNM REC payments is on a steady decline because the PRC established a fairly low requirement (3% by 2015, constant thereafter) for utilities to have customer-scale solar in their mix. As utilities like PNM start to reach that disappointingly low standard, their REC incentives have decreased and, at some point in the not-too-distant future, are likely to be eliminated. In 2009, a Santa Fe

homeowner received a REC payment of 13¢ for every kWh of solar energy generated as well as a net metering benefit. At the time of this report the PNM REC credit payable for solar PV had fallen to 3¢/kWh for systems under 10kW (applicable to most residences), 5¢/kWh for commercial systems up to 100 kW, and 2¢/kWh for PV systems of 100kW to 1 MW in size.

SFPP would provide incentives to the homeowner or small business to boost solar PV to a level of 11.25% of the total electric demand in 2028, compared to Status Quo's 0.45% presently and the 3% by 2015 PRC requirement. The combined net metering and production incentive benefit to PV users will average 14¢/kWh. More jobs per megawatt of installed capacity are created from customer-scale solar power than from any other form of electric generation.

6. Costs and Benefits of Energy Efficiency

6.1. Aggressive Energy Efficiency Standard

Santa Fe Public Power would adopt and implement an Aggressive Energy Efficiency Standard, reducing per customer usage by 15% in 2020 and to 20% in 2028. Current energy usage within Santa Fe County for residential customers is 581 kWh/month and 6,480 kWh/month for commercial customers. Currently PNM is mandated by the New Mexico Efficient Use of Energy Act (EUEA) to reduce total sales from 2005 by 10% in 2020.

6.2. Energy Efficiency Costs and Performance

Increased energy efficiency has many positive effects, most notably in reduced customer bills, reduced carbon emissions, decreased operating costs for the utility, and increased local employment opportunities. Costs associated with meeting SFPP's Aggressive Energy Efficiency Standard are assumed to be 2.6¢/kWh of electricity saved. PNM has reported costs of approximately 1.8¢/kWh for meeting their actual savings of just 0.6%/year. These costs are associated with an approximately 2.3% reduction in total sales from 2005. More aggressive standards for SFPP justify the higher cost per kWh assumption. Figure 6 compares cumulative energy efficiency savings for SFPP and the Status Quo. . The SFPP Aggressive Energy Efficiency Standard results in cumulative energy savings of 2,788 gigawatt-hours (GWh) through 2033, compared to PNM's 981 GWh. The average residential customer will save approximately $5,000 through 2033, and commercial customer will save $41,000 over the same period.

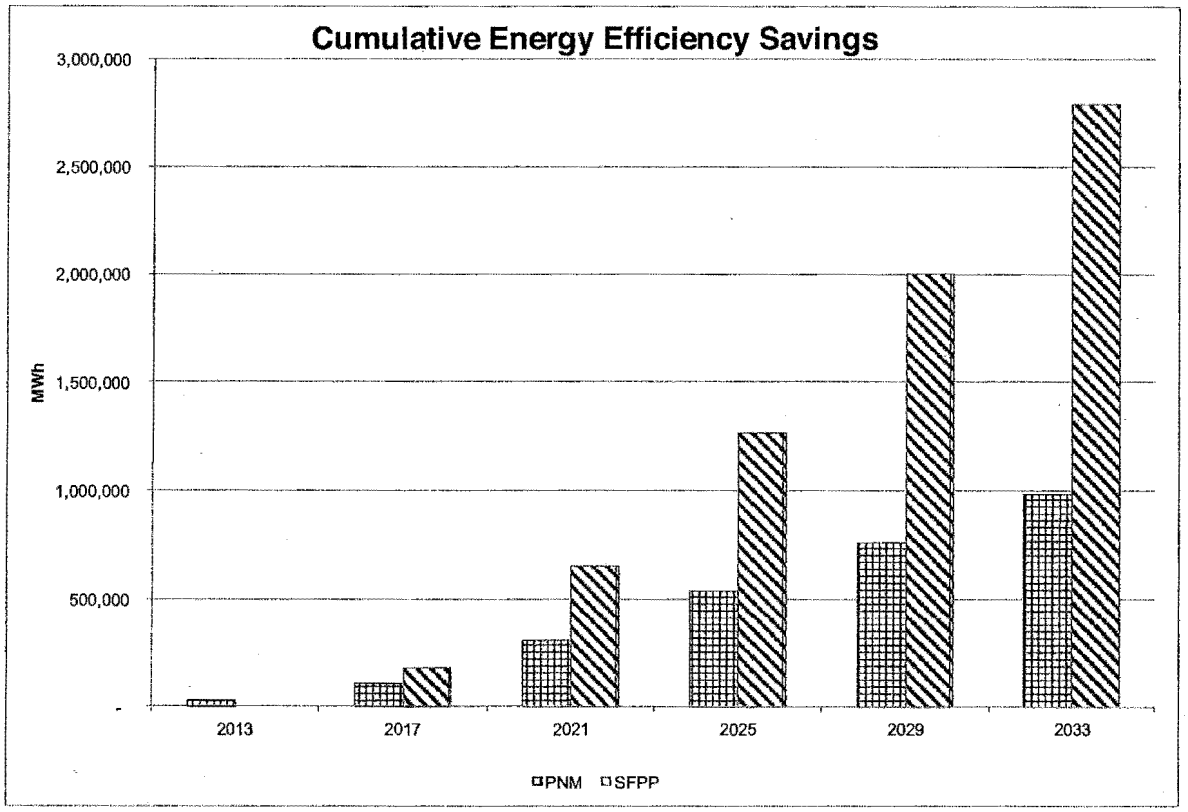

Figure 8: PNM vs. SFPP1 and 2 Energy Savings: A Comparison of Complying with the State Efficient Use of Energy Act vs. the SFPP Aggressive Energy Efficiency Standard.

7. Potential for Economic Development

7.1. Economic Development: Growing a Strong Locally-Based Solar Economy

Both the City of Santa Fe and the unincorporated areas of Santa Fe County have the potential to be a national leader in and hub for solar-related research and development (R&D), solar component manufacturing and utility-scale and customer-scale solar installations. The goals, policies and capital projects of SFPP would clearly help stimulate this possibility.

The combination of New Mexico's moderate year-around climate, location and elevation in the Southwest, and 300 days of sunshine per year, are all incentives for private firms to establish solar research and development facilities in Santa Fe. An added incentive is the Trades and Advanced Technology Center (TATC) now in place at Santa Fe Community College (SFCC), with newly constructed office and lab facilities for prospective partners and some 300 acres of open space for materials and performance testing of PV systems in various configurations.

The site at SFCC is suitable for field work throughout the year, and in the next 10 months the College will have completed a 1.7MW single axis solar PV system that supplies over 50% of its

electricity requirements. The new TATC building has a rooftop mounted PV thermal system for heating water. The potential exists for integrated expansion and testing of these systems with new R&D initiated by the College and private sector partners.

SFCC's mission is focused on workforce development. With a renewables faculty, curriculum, and instructional facilities available at the College, and a sizeable student population, private firms have the opportunity to organize and participate in classroom programs for potential installers and to supplement that with field exposure and training for prospective employees before graduation.

With a strong emphasis on customer-scale solar PV and locally-sited utility-scale solar projects (Scenario 2), SFPP could play a strong role in establishing and growing a vibrant, diverse solar economy in the County – including R&D, component manufacturing and solar installation firms.

As a primary source of capital for distributed generation PV and in-county utility scale solar (especially in SFPP2), SFPP may in a position to offer substantial technical and resource support to Santa Fe Community College, the Los Alamos and Sandia labs, and local and state authorities to attract solar products manufacturing and R&D to Santa Fe. The near-term outcome of such a partnership or consortium could be a northern New Mexico version of the Solar Technology Accelerator Center in Aurora, Colorado which tests solar products and new technology.

Although solar product manufacturing can support permanent, long-term employment, the more likely and immediate economic development effect that SFPP may have is to spur the rapid growth of the PV energy generation sector in Santa Fe. PV generation is service-oriented, which also characterizes the local labor market and the curriculum focus of Santa Fe Community College, with training and certification in solar installation. With a dramatic increase in the amount of distributed generation and in-county utility-scale solar, representing 60% of SFPP's total renewables generation (Scenario 2), SFPP could have a substantial impact on the local economy.

The Jobs and Economic Development Impact (JEDI) models developed by DOE's National Renewable Energy Laboratory (NREL) estimate the number of jobs and economic impacts associated with power generation, fuel production, and other projects. Tables 9 and 10 provide a summary of the local economic impact of 44 MW (see Section 4.2) of customer-scale and 60 MW utility scale solar projects will have on the Santa Fe economy. Each table is separated into two separate periods, during construction and installation and operations. More detailed explanations, referenced from NREL's JEDI website, of jobs, earnings, and outputs resulting from local solar projects are provided below the tables

Table 9: Economic Development from SFPP 1 and 2's Customer-Scale PV

System Type	Customer Scale PV
Capacity (MW)	44
Years Installed	2013-2028

Period	Jobs	Earnings $000	Output $000
Construction and Installation	3,180	$118,132	$297,061
Operating Years	20	$1,047	$1,753

Table 10: Economic Development from SFPP 2's Locally-sited Utility Scale PV

System Type	Utility Scale PV
Capacity (MW)	60
Year Installed	2022

Period	Jobs	Earnings $000	Output $000
Construction and Installation	3,477	$124,227	$308,786
Operating Years	18	$915	$1,477

Total jobs represent labor only—no materials. Companies or businesses that fall into this category of results include project developers, environmental and permitting consultants, road builders, concrete-pouring companies, construction companies, and operations and maintenance (O/M) personnel.

Total earnings occur in supporting industries. These results are driven by the increase in demand for goods and services from direct on-site project spending. Businesses and companies include construction material and component suppliers, analysts and attorneys who assess project feasibility and negotiate contract agreements, banks financing the projects, equipment manufacturers, and manufacturers of replacement and repair parts.

Total output is driven by reinvestment and spending of earnings by direct and indirect beneficiaries. Induced results are often associated with increased business at local restaurants, hotels, and retail establishments, but also include child care providers and any other entity affected by increased economic activity and spending.

7.2. Employment Impact of Local Energy Efficiency

Energy efficiency is, by far, the least cost option compared to building and operating new electric generating facilities. In other words, it's much less expensive to save a kWh than it is to generate a kWh. Energy efficiency programs cost 2-3 ¢ per kWh saved to implement, whereas new electric plants can cost 3 to 4+ times more per kWh. Given the low cost of energy efficiency, many customers ask, "Why doesn't my privately-owned utility emphasize energy efficiency more in its portfolio mix?" The simple answer is that regulated (by the PRC) for-profit electric utility monopolies are in business to make a profit and a rate of return for their

shareholders. While they may be required to have energy efficiency programs under laws in some states (such as New Mexico's Efficient Use of Energy Act), selling less electricity via energy efficiency is fundamentally in direct opposition to their core business model – to maximize profit. So it is perfectly understandable why a for-profit privately-owned utility monopoly does not fully embrace and aggressively implement energy efficiency. This is also why a for-profit private utility attempts to limit incentives for customer-scale renewable energy since it also decreases their electricity sales (i.e. revenue), and, therefore, profit.

In contrast, publicly-owned (by a City or County) electric utilities, of course, do not have a profit motive and, therefore, do not have an incentive to sell as much electricity as possible. From a financial perspective, they only need to establish rates and generate revenue sufficient to meet costs – not to make a profit on top of that. Hence, a public utility, such as SFPP, is free to aggressively implement less expensive, much more cost-effective energy efficiency as one of its critical electric service strategies. And similarly, SFPP is free to promote customer-scale renewable energy without concern for foregone profit.

SFPP assumes a cost of 2.6¢ per kWh to fund programs intended to achieve an Aggressive Energy Efficiency Standard that will result in a 20% reduction in per dwelling energy usage over a 15-year period, double the current state standard of the Efficient Use of Energy Act (EUEA) of 10% in 15 years. The total cost of SFPP's standard over 20 years would be $72 million to save 2,788 GWh over the time period.

When compared to SFPP's average cost of electricity of 11.1¢/kWh, aggressive energy efficiency will save the average residential user $5,000 in energy costs over the 20-year analysis and the commercial customer $41,000 during the same time period. To achieve these savings, most consumers and small businesses will need to make investments in energy-saving appliances, insulation, heating, lighting and cooling technologies and facilities stimulated by rebates and incentives supplied by SFPP.

8. Conclusions and Next Steps Options

As suggested in the Executive Summary, Santa Fe Public Power could yield significant energy, economic, and environmental benefits for electricity consumers and the region as a whole. The concept deserves further consideration by area policymakers, and to this end, the following steps are recommended to investigate SFPP's feasibility:

1) Public/Community Education and Outreach and Public Opinion Assessment - Santa Fe citizens
should be given the opportunity to learn the potential economic and environmental benefits and costs of a publicly-owned electric utility, and to express their opinions on the concept to area policymakers.

2) Refinement of Costs - A more refined, technical-level engineering analysis is needed of PNM's load profile in the County, the location, age and condition of PNM's distribution system,

and the real extent to which SFPP could acquire and pay for a sustainable power supply sourced entirely from natural gas, solar and wind.
3) PNM's Role – Areas to be addressed with PNM might include a lease or lease/purchase of its distribution system, including an O/M contract with PNM, and outsourced customer service and billing functions. The availability of wholesale renewable energy and transmission capacity from PNM would also be important to clarify.

4) Availability of Energy – The wholesale electricity markets should be examined for near-term availability of natural gas-derived electricity and renewables. The inquiry could include contacts with turnkey power developers and renewables suppliers and a technical review of the regional transmission system for capacity availability and constraints.

Santa Fe Public Power may make sense as an alternative to the Status Quo in order to secure a faster transition from coal, with the potential to dramatically stimulate economic development and job creation in the region. Questions to be answered largely involve the practicality of a publicly-owned electric utility in Santa Fe. Key elements of a future, refined cost-benefit analysis should include an assessment of Santa Fe's ability to finance start-up and acquisition costs, purchase and transport cost-competitive natural gas and renewables-sourced wholesale power, and access through lease or lease/purchase the distribution infrastructure already in place.

Appendix A-List of Terms

Capacity factor: Actual energy generated over a certain time period divided by theoretical ability to generate electricity over that same time period. Capacity factor is most often referenced as an annual calculation.

Customer Scale Solar = Distributed Generation Solar: Electric generation that is sited at a customer's premises (not owned by the utility)

Energy: Usage over a period of time, measured in GWh, MWh, or kWh

Energy efficiency: Measures, including energy conservation measures, or programs that target consumer behavior, equipment or devices to result in a decrease in consumption of electricity without reducing the amount or quality of energy services.

Load = Demand: Usage at a point in time, measured in megawatts (MW) or kilowatts (kW)

O&M: Operations and maintenance – costs of operating generation, transmission, and distribution facilities, excludes depreciation and fuel.

Peak demand: Occurs when demand for energy is at its greatest

Kilowatt-hour (kWh): A unit of energy, measured over one hour, equal to 1,000 watts. A 1,000 watt appliance (like an electric space heater) that operates for an hour, consumes 1 kWh.

Megawatt-hour (MWh): A unit of energy, measured over one hour, equal to 1,000,000 watts. A MWh equals 1,000 kWh.

Gigawatt-hour (GWh): A unit of energy, measured over one hour, equal to 1,000,000,000 watts. A GWh equals 1,000 MWh.

Appendix B- Legal Framework

Negotiated Access to Distribution System

The study assumes that the County and City will make an effort to avoid costly and lengthy litigation to secure access to the PNM distribution system and instead will work jointly with PNM to transfer access to and eventual ownership of the distribution system to SFPP, most likely as a Joint Powers entity pursuant to the Joint Powers Agreements Act. SFPP would operate with a small professional staff and contract for services such as customer service and billing, and separately for the distribution system, along with legal and financial advisory services. Of course, successfully avoiding costly and lengthy litigation would not entirely be within the control of the City and County.

The most likely form of transfer would be through a negotiated lease or lease/purchase arrangement based on an appraisal of the system, somewhere between the system's declared book value of $65 million and replacement cost of $106 million. Depending on the cost of acquisition, SFPP's financial plan assumes an annual debt service payment that could range between $11 million for a book value purchase or $19 million at replacement cost and ownership of the distribution system. Federal tax law restricts tax exempt instruments for acquisition of existing electrical distribution facilities; thus taxable instruments would be required and the cost of borrowing would be increased. In this case, staff at the New Mexico Finance Authority informally indicated that a 20-year revenue bond at 4.5% might be a possible alternative for SFPP.

If PNM and area local officials cannot reach a negotiated, cooperative agreement on access by SFPP to the distribution system, then legal action through the state courts may be necessary. The process essentially involves formal action by the County or City to condemn PNM's distribution assets under the state's eminent domain statute. The City or County would assume control of the system, and then complete an appraisal of the assets, whose value would eventually be settled through mediation or more likely, a formal court proceeding, possible appeal, and a binding decision to follow. The process is explained in the sections that follow.

Statutory Authorization for the Utility

New Mexico statutes grant authority to acquire, operate and maintain an electric utility (including generation and distribution of electricity) to persons residing within the "service area" of a municipality. The "service area" is the territory within the municipality and within five miles thereof. *See* NMSA 1978, Sections 3-24-12(A)(E) and 3-24-12(E) (1965, as amended). Municipalities may operate and acquire utilities outside of the specified service area so long as consent of the utility is obtained. *See* NMSA 1978, Sections 3-24-8(B) and 3-24-8(E). Operating outside of the statutory service area limits financing options. *See* NMSA 1978, Section 3-24-1(C). Although counties have the same authority granted to municipalities (*see* NMSA 1978, Section 4-37-1), that authority is limited by statutes such as section 3-24-8(B).

A "municipality" located within a Class A county whose population was between sixty thousand and one hundred thousand persons according to the 1990 census may acquire privately owned electric facilities by condemnation. These municipalities must supply electricity to the

municipality or inhabitants within the "service area," and utility revenue derived from the operations may only be used to furnish electricity. The governing authority for such a City-County utility would be a Joint Powers Entity pursuant to the Joint Powers Agreements Act, NMSA 1978 11-1-1 *et seq.* (1961). Within statutory guidelines, the entity would be outside the regulatory authority of the Public Regulation Commission.

Sale of electricity from such a municipal or county utility is permitted to U.S. government and State of New Mexico agencies and departments, even outside of the service area. Generating facilities that are solely or jointly owned by a municipality may sell wholesale power in or outside the service area, through negotiated or competitive sale.

Condemnation by Eminent Domain (42A-1-1 to 42A-1-33 NMSA 1978)
As noted previously, a "municipality" located within a Class A county whose population was between sixty thousand and one hundred thousand persons according to the 1990 census may acquire privately owned electric facilities by condemnation. Condemnation of such facilities would be achieved through the means described in the Eminent Domain Code. Like all litigation, condemnation of a private utility would be expensive and time consuming. A series of events might occur, as follows:

A qualified appraisal of the utility's assets would be needed which would form the basis for a subsequent offer to purchase assets at the appraised value. The appraisal could be based on: a) the fair market value of the utility assets, based on comparable sales; b) the net present value of the utility future income stream; or c) the replacement cost or book value (net undepreciated value of the assets);

Acceptance or rejection of the offer;
If rejected, a petition for condemnation would be prepared and filed in State District Court;

If the matter is fully litigated, approximately 18 months of discovery would be required, followed by a two-week trial, possibly by a jury. Although the Eminent Domain Code permits immediate possession of assets on approval of a preliminary order of entry, the subsequent judgment would be binding, including the cost and responsibility of operating the utility in the interim, making this a less desirable option.

The utility might claim damages to its statewide generation, transmission, and distribution system, which, if awarded, could increase the judgment and the cost of acquiring the system.

Transmission Authority (16 U.S.C. Sec. 824)
For access to the PNM transmission system, the SFPP would be required to file a petition with the Federal Energy Regulatory Commission (FERC) for an Open Access Tariff Rate, which would effectively require PNM to transport purchased power for Santa Fe on pre-arranged costs and terms, provided the utility has excess transmission capacity.

As the balancing authority for the region, PNM is also required to assist Santa Fe with daily load management requirements for power, whether through a third party supplier contracted by SFPP, or with SFPP directly.

Appendix C – Scenario 1 *pro forma* Financial Statement

Scenario 1 pro forma 2013-2022

Revenue drivers	Est. Growth	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Customers											
Residential	1.20%	51,119	51,732	52,353	52,981	53,617	54,260	54,912	55,570	56,237	56,912
Commercial	0.90%	5,833	5,886	5,939	5,992	6,046	6,101	6,156	6,211	6,267	6,323
Total		56,952	57,618	58,292	58,973	59,663	60,361	61,067	61,781	62,504	63,235
Annual sales per customer (MWh)											
Residential	Varies	6.97	6.82	6.67	6.52	6.37	6.23	6.08	5.93	5.88	5.84
Commercial	Varies	77.76	76.09	74.43	72.76	71.09	69.43	67.76	66.10	65.61	65.12
Total		84.73	82.92	81.10	79.28	77.47	75.65	73.84	72.02	71.49	70.96
Distributed Generation (MWh)											
Electricity Generated from Customer Base		19,091	24,759	30,281	35,652	40,864	45,912	50,789	55,488	60,632	65,802
Rate, $/ KWH											
Residential	2.50%	$ 0.0951	$ 0.0987	$ 0.1024	$ 0.1061	$ 0.1100	$ 0.1139	$ 0.1180	$ 0.1216	$ 0.1245	$ 0.1275
Commercial	1.90%	$ 0.0794	$ 0.0819	$ 0.0843	$ 0.0868	$ 0.0894	$ 0.0919	$ 0.0946	$ 0.0968	$ 0.0985	$ 0.1001
Gross System Demand (MWh)		810,000	800,823	791,372	781,642	771,629	761,327	750,732	739,838	741,988	744,105
Net System Demand (MWh)		790,909	776,064	761,091	745,991	730,765	715,415	699,942	684,350	681,356	678,304
Expense Drivers, $000	**Est. Growth**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Cost of Wholesale Energy, $/kWh	2.00%	$ 0.0515	$ 0.0526	$ 0.0536	$ 0.0547	$ 0.0558	$ 0.0570	$ 0.0581	$ 0.0593	$ 0.0605	$ 0.0617
System Management, $000/yr	2.00%	2,000	2,040	2,081	2,122	2,165	2,208	2,252	2,297	2,343	2,390
Billing & Customer Service, $/customer	2.00%	60	61	62	64	65	66	68	69	70	72
Maintenance of Distribution System, $000/yr	2.00%	3,500	3,570	3,641	3,714	3,789	3,864	3,942	4,020	4,101	4,183
Distributed Generation Incentive	0.00%	0.140	0.140	0.140	0.140	0.140	0.140	0.140	0.140	0.140	0.140
Efficiency Program, $/kWh	0.00%	0.0260	0.0260	0.0260	0.0260	0.0260	0.0260	0.0260	0.0260	0.0260	0.0260
Distribution System & Stranded Assets											
Purchase of PNM distribution system, $000	106,171	*Taxable*									
Purchase of PNM stranded assets, $000	-	*Tax-Exempt*									
Start-Up Costs, $000	49,100	*Tax-Exempt*									
Total	155,271										
Financing											
Taxable bonded debt interest rate	4.00%										
Tax-Exempt bonded debt interest rate	3.50%		*Timing of Debt Payments*								
Bond Terms, years	20	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
Tax-exempt bond principal payment (PPMT)		1,736	1,797	1,860	1,925	1,992	2,062	2,134	2,209	2,286	2,366
Tax-exempt bond interest payment (PPMT)		1,719	1,658	1,595	1,530	1,462	1,393	1,320	1,246	1,168	1,088
Taxable bond principal payment		3,565	3,708	3,856	4,011	4,171	4,338	4,511	4,692	4,880	5,075
Taxable bond interest payment		4,247	4,104	3,956	3,802	3,641	3,474	3,301	3,120	2,933	2,738
Depreciation		5,972	5,972	5,972	5,972	5,972	5,972	5,972	5,972	5,972	5,972

Electrical Earnings $(000)	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Operating revenue										
Residential	$ 33,906	$ 34,841	$ 35,766	$ 36,681	$ 37,585	$ 38,476	$ 39,352	$ 40,040	$ 41,188	$ 42,356
Commercial	36,024	36,659	37,269	37,853	38,411	38,941	39,442	39,744	40,489	41,235
Total Operating Revenue	69,930	71,499	73,035	74,534	75,996	77,416	78,794	79,784	81,677	83,591
Operating expenses $(000)		0.022	0.021	0.020	0.019	0.019	0.018	0.012	0.023	0.023
Cost of Efficiency Program	456	921	1,396	1,881	2,375	2,880	3,395	3,573	3,754	3,939
Cost of Distributed Generation Incentive	3,673	4,466	5,239	5,991	6,721	7,428	8,110	8,768	9,488	10,212
Cost of Wholesale Energy	44,935	45,015	45,072	45,105	45,111	45,092	45,044	44,967	45,709	46,458
System Management	2,000	2,040	2,081	2,122	2,165	2,208	2,252	2,297	2,343	2,390
Billing & Customer Service	3,417	3,526	3,639	3,755	3,875	3,999	4,126	4,258	4,394	4,534
Maintenance of Distribution System	3,500	3,570	3,641	3,714	3,789	3,864	3,942	4,020	4,101	4,183
Depreciation	5,972	5,972	5,972	5,972	5,972	5,972	5,972	5,972	5,972	5,972
Interest Expense	5,965	5,762	5,551	5,331	5,104	4,867	4,621	4,366	4,101	3,826
Total Operating Expenses	69,918	71,273	72,591	73,872	75,112	76,309	77,462	78,222	79,862	81,514

Scenario 1 pro forma 2023-2033

Revenue drivers	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Customers											
Residential	57,595	58,286	58,986	59,693	60,410	61,135	61,868	62,611	63,362	64,122	64,892
Commercial	6,380	6,438	6,495	6,554	6,613	6,672	6,732	6,793	6,854	6,916	6,978
Total	63,975	64,724	65,481	66,247	67,023	67,807	68,601	69,404	70,216	71,038	71,870
Annual sales per customer (MWh)											
Residential	5.80	5.75	5.71	5.66	5.62	5.58	5.58	5.58	5.58	5.58	5.58
Commercial	64.64	64.15	63.67	63.18	62.69	62.21	62.21	62.21	62.21	62.21	62.21
Total	70.43	69.90	69.37	68.84	68.32	67.79	67.79	67.79	67.79	67.79	67.79
Distributed Generation (MWh)											
Electricity Generated from Customer Base	70,997	76,216	81,459	86,725	92,013	85,057	85,938	86,828	87,727	88,636	89,554
Rate, $/ KWH											
Residential	$ 0.1305	$ 0.1335	$ 0.1366	$ 0.1397	$ 0.1428	$ 0.1445	$ 0.1467	$ 0.1489	$ 0.1512	$ 0.1536	$ 0.1484
Commercial	$ 0.1018	$ 0.1035	$ 0.1051	$ 0.1068	$ 0.1085	$ 0.1090	$ 0.1099	$ 0.1109	$ 0.1118	$ 0.1128	$ 0.1083
Gross System Demand (MWh)	746,189	748,237	750,250	752,226	754,164	756,064	763,891	771,802	779,796	787,874	796,038
Net System Demand (MWh)	675,192	672,021	668,791	665,501	662,151	671,007	677,954	684,974	692,069	699,238	706,483
Expense Drivers, $000	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Cost of Wholesale Energy, $/kWh	$ 0.0630	$ 0.0642	$ 0.0655	$ 0.0669	$ 0.0682	$ 0.0696	$ 0.0710	$ 0.0724	$ 0.0738	$ 0.0753	$ 0.0768
System Management, $000/yr	2,438	2,487	2,536	2,587	2,639	2,692	2,746	2,800	2,856	2,914	2,972
Billing & Customer Service, $/customer	73	75	76	78	79	81	82	84	86	87	89
Maintenance of Distribution System, $000/yr	4,266	4,352	4,439	4,528	4,618	4,711	4,805	4,901	4,999	5,099	5,201
Distributed Generation Incentive	0.140	0.140	0.140	0.140	0.140	0.140	0.140	0.140	0.140	0.140	0.140
Efficiency Program, $/kWh	0.0260	0.0260	0.0260	0.0260	0.0260	0.0260	0.0260	0.0260	0.0260	0.0260	0.0260
Distribution System & Stranded Assets											
Purchase of PNM distribution system, $000											
Purchase of PNM stranded assets, $000											
Start-Up Costs, $000											
Financing											
Taxable bonded debt interest rate											
Tax-Exempt bonded debt interest rate											
Bond Terms, years	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*	*21*
Tax-exempt bond principal payment (PPMT)	2,449	2,535	2,624	2,715	2,810	2,909	3,011	3,116	3,225	3,338	-
Tax-exempt bond interest payment (PPMT)	1,006	920	831	739	644	546	444	339	230	117	-
Taxable bond principal payment	5,278	5,489	5,708	5,937	6,174	6,421	6,678	6,945	7,223	7,512	-
Taxable bond interest payment	2,535	2,323	2,104	1,876	1,638	1,391	1,134	867	589	300	-
Depreciation	5,972	5,972	5,972	5,972	5,972	5,972	5,972	5,972	5,972	5,972	5,972

Electrical Earnings $(000)	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Operating revenue											
Residential	$ 43,545	$ 44,753	$ 45,981	$ 47,230	$ 48,498	$ 49,279	$ 50,623	$ 52,012	$ 53,448	$ 54,934	$ 53,722
Commercial	41,982	42,730	43,478	44,227	44,976	45,259	46,043	46,849	47,678	48,529	47,000
Total Operating Revenue	85,527	87,483	89,460	91,457	93,474	94,538	96,666	98,861	101,126	103,463	100,721
	0.023	0.023	0.022	0.022	0.022	0.011	0.022	0.022	0.023	0.023	(0.027)
Cost of Efficiency Program	4,127	4,318	4,513	4,712	4,914	4,965	5,017	5,069	5,121	5,174	-
Cost of Distributed Generation Incentive	10,940	11,670	12,404	13,142	13,882	12,908	13,031	13,156	13,282	13,409	13,538
Cost of Wholesale Energy	47,216	47,981	48,754	49,535	50,323	51,940	53,528	55,164	56,850	58,587	60,378
System Management	2,438	2,487	2,536	2,587	2,639	2,692	2,746	2,800	2,856	2,914	2,972
Billing & Customer Service	4,679	4,829	4,983	5,142	5,306	5,476	5,650	5,831	6,017	6,209	6,408
Maintenance of Distribution System	4,266	4,352	4,439	4,528	4,618	4,711	4,805	4,901	4,999	5,099	5,201
Depreciation	5,972	5,972	5,972	5,972	5,972	5,972	5,972	5,972	5,972	5,972	5,972
Interest Expense	3,540	3,243	2,935	2,615	2,282	1,937	1,578	1,206	819	417	-
Total Operating Expenses	83,178	84,852	86,537	88,232	89,937	90,601	92,327	94,098	95,916	97,782	94,468

Electrical Net Cash Flow	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Net Earnings Before Tax	$ 2,349	$ 2,631	$ 2,923	$ 3,225	$ 3,538	$ 3,937	$ 4,339	$ 4,763	$ 5,210	$ 5,682	$ 6,253
Plus Depreciation	5,972	5,972	5,972	5,972	5,972	5,972	5,972	5,972	5,972	5,972	5,972
Less Principal Repayment	(7,727)	(8,024)	(8,332)	(8,652)	(8,985)	(9,330)	(9,689)	(10,061)	(10,448)	(10,850)	-
Net Cash Flow	$ 594	$ 579	$ 563	$ 545	$ 525	$ 579	$ 622	$ 674	$ 734	$ 804	$ 12,225

Appendix D- Scenario 2 *pro forma* Financial Statement

Scenario 2 pro forma 2013-2022

Revenue drivers	Est. Growth	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Customers											
Residential	1.20%	51,119	51,732	52,353	52,981	53,617	54,260	54,912	55,570	56,237	56,912
Commercial	0.90%	5,833	5,886	5,939	5,992	6,046	6,101	6,156	6,211	6,267	6,323
Total		56,952	57,618	58,292	58,973	59,663	60,361	61,067	61,781	62,504	63,235
Annual sales per customer (MWh)											
Residential	Varies	6.97	6.82	6.67	6.52	6.37	6.23	6.08	5.93	5.88	5.84
Commercial	Varies	77.76	76.09	74.43	72.76	71.09	69.43	67.76	66.10	65.61	65.12
Total		84.73	82.92	81.10	79.28	77.47	75.65	73.84	72.02	71.49	70.96
Distributed Generation (MWh)											
Electricity Generated from Customer Base		19,091	24,759	30,281	35,652	40,864	45,912	50,789	55,488	60,632	65,802
Rate, $/ KWH											
Residential	2.50%	$ 0.0933	$ 0.0969	$ 0.1005	$ 0.1042	$ 0.1079	$ 0.1118	$ 0.1158	$ 0.1197	$ 0.1222	$ 0.1314
Commercial	1.85%	$ 0.0779	$ 0.0803	$ 0.0827	$ 0.0852	$ 0.0877	$ 0.0903	$ 0.0928	$ 0.0953	$ 0.0966	$ 0.1032
Gross System Demand (MWh)		810,000	800,823	791,372	781,642	771,629	761,327	750,732	739,838	741,988	744,105
Net System Demand (MWh)		790,909	776,064	761,091	745,991	730,765	715,415	699,942	684,350	681,356	678,304
Expense Drivers	**Est. Growth**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Cost of Wholesale Natural Gas, $/kWh	2.00%	$ 0.050	$ 0.051	$ 0.052	$ 0.053	$ 0.054	$ 0.055	$ 0.056	$ 0.057	$ 0.059	$ 0.060
Cost of Wholesale Wind, $/kWh	2.00%	0.050	0.051	0.052	0.053	0.054	0.055	0.056	0.057	0.059	0.060
Distributed Generation Incentive	0.00%	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400
System Management, $000/yr	2.00%	2,000	2,040.00	2,080.80	2,122.42	2,164.86	2,208.16	2,252.32	2,297.37	2,343.32	2,390.19
Variable O/M of NGCC Facility, $/mWh	2.00%	-	-	-	-	-	-	-	3.940	4.019	4.099
Fixed O/M of NGCC, $/kW-yr	2.00%	-	-	-	-	-	-	-	16.530	16.860	17.197
Fixed O/M of Solar Facility, $/kW-yr	2.00%	-	-	-	-	-	-	-	-	-	31
Maintenance of Distribution System, $000/yr	2.00%	3,500	3,570	3,641	3,714	3,789	3,864	3,942	4,020	4,101	4,183
Billing/Customer Service, $/customer	2.00%	60	61	62	64	65	66	68	69	70	72
Transmission Costs, $/kW-yr	2.00%	-	-	-	-	-	-	-	36.53	37.26	38.00
Fuel, $/kWh	2.00%	-	-	-	-	-	-	-	0.0368	0.0375	0.0382
Efficiency Program, $/kWh	0.00%	0.026	0.0260	0.0260	0.0260	0.0260	0.0260	0.0260	0.0260	0.0260	0.0260
Distribution System & Stranded Assets											
Purchase of PNM distribution system, $000	106,171	*Taxable*									
Purchase of PNM stranded assets, $000	-	*Tax-Exempt*									
Start-Up Costs, $000	49,100	*Tax-Exempt*									
Total	155,271										
Distribution System Financing											
Taxable bonded debt interest rate	4.00%										
Tax-Exempt bonded debt interest rate	3.50%		*Timing of Debt Payments*								
Bond Terms, years	20	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
Tax-exempt bond principal payment (PPMT)		1,736	1,797	1,860	1,925	1,992	2,062	2,134	2,209	2,286	2,366
Tax-exempt bond interest payment (PPMT)		1,719	1,658	1,595	1,530	1,462	1,393	1,320	1,246	1,168	1,088
Taxable bond principal payment		3,565	3,708	3,856	4,011	4,171	4,338	4,511	4,692	4,880	5,075
Taxable bond interest payment		4,247	4,104	3,956	3,802	3,641	3,474	3,301	3,120	2,933	2,738
Generation Financing ($000)											
Combined Cycle Plant Principal Payment		-	-	-	-	-	-	-	2,306	2,386	2,470
Combined Cycle Plant Interest Payment		-	-	-	-	-	-	-	2,282	2,201	2,118
Solar Field Principal Payment		-	-	-	-	-	-	-	-	-	4,774
Solar Field Interest Payment		-	-	-	-	-	-	-	-	-	4,725
Depreciation											
Distibution System		5,972	5,972	5,972	5,972	5,972	5,972	5,972	5,972	5,972	5,972
NGCC Facility		-	-	-	-	-	-	-	2,508	2,508	2,508
Solar Facility		-	-	-	-	-	-	-	-	-	5,192
Electrical Earnings $(000)		**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Operating revenue											
Residential		$ 33,264	$ 34,186	$ 35,099	$ 36,003	$ 36,895	$ 37,774	$ 38,638	$ 39,404	$ 40,423	$ 43,659
Commercial		35,341	35,970	36,574	37,153	37,705	38,230	38,727	39,113	39,737	42,503
Total Operating Revenue		68,606	70,156	71,673	73,155	74,600	76,004	77,366	78,517	80,160	86,162
Operating expenses ($ 000)											
Energy Efficiency Program		456	921	1,396	1,881	2,375	2,880	3,395	3,573	3,754	3,939
Distributed Generation Incentive		3,673	4,466	5,239	5,991	6,721	7,428	8,110	8,768	9,488	10,212
Cost of Wholesale Energy		32,400	32,674	32,934	33,179	33,409	33,623	33,818	5,483	4,879	4,446
Cost of Wind Energy		11,195	10,990	10,775	10,551	10,317	10,074	9,822	9,561	10,303	3,223
System Management		2,000	2,040	2,081	2,122	2,165	2,208	2,252	2,297	2,343	2,390
Variable O/M of NGCC Facility		-	-	-	-	-	-	-	1,956	1,995	2,021
Fixed O/M of NGCC		-	-	-	-	-	-	-	1,102	1,124	1,146
Fixed O/M of Solar Facility		-	-	-	-	-	-	-	-	-	1,867
Maintenance of Distribution System		3,500	3,570	3,641	3,714	3,789	3,864	3,942	4,020	4,101	4,183
Billing & Customer Service		3,417	3,526	3,639	3,755	3,875	3,999	4,126	4,258	4,394	4,534
Transmission Costs		-	-	-	-	-	-	-	2,435	2,484	2,534
Fuel		-	-	-	-	-	-	-	18,247	18,612	18,853
Depreciation		5,972	5,972	5,972	5,972	5,972	5,972	5,972	8,480	8,480	13,672
Interest Expense		5,965	5,762	5,551	5,331	5,104	4,867	4,621	6,648	6,302	10,669
Total Operating Expenses		68,579	69,921	71,228	72,497	73,726	74,914	76,058	76,828	78,259	83,689
Electrical Net Cash Flow		**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Net Earnings Before Tax		$ 27	$ 235	$ 446	$ 658	$ 873	$ 1,090	$ 1,308	$ 1,689	$ 1,901	$ 2,473
Plus Depreciation		5,972	5,972	5,972	5,972	5,972	5,972	5,972	8,480	8,480	13,672
Less Principal Repayment		(5,302)	(5,505)	(5,716)	(5,936)	(6,163)	(6,400)	(6,646)	(9,206)	(9,552)	(14,684)
Net Cash Flow		$ 697	$ 702	$ 701	$ 695	$ 682	$ 662	$ 634	$ 962	$ 829	$ 1,461

Scenario 2 pro forma 2023-2033

Revenue drivers	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Customers											
Residential	57,595	58,286	58,986	59,693	60,410	61,135	61,868	62,611	63,362	64,122	64,892
Commercial	6,380	6,438	6,495	6,554	6,613	6,672	6,732	6,793	6,854	6,916	6,978
Total	63,975	64,724	65,481	66,247	67,023	67,807	68,601	69,404	70,216	71,038	71,870
Annual sales per customer (MWh)											
Residential	5.80	5.75	5.71	5.66	5.62	5.58	5.58	5.58	5.58	5.58	5.58
Commercial	64.64	64.15	63.67	63.18	62.69	62.21	62.21	62.21	62.21	62.21	62.21
Total	70.43	69.90	69.37	68.84	68.32	67.79	67.79	67.79	67.79	67.79	67.79
Distributed Generation (MWh)											
Electricity Generated from Customer Base	70,997	76,216	81,459	86,725	92,013	85,057	85,938	86,828	87,727	88,636	89,554
Rate, $/ KWH											
Residential	$ 0.1338	$ 0.1363	$ 0.1388	$ 0.1423	$ 0.1440	$ 0.1465	$ 0.1475	$ 0.1485	$ 0.1496	$ 0.1496	$ 0.1496
Commercial	$ 0.1044	$ 0.1056	$ 0.1069	$ 0.1081	$ 0.1104	$ 0.1125	$ 0.1133	$ 0.1145	$ 0.1150	$ 0.1150	$ 0.1150
Gross System Demand (MWh)	746,189	748,237	750,250	752,226	754,164	756,064	763,891	771,802	779,796	787,874	796,038
Net System Demand (MWh)	675,192	672,021	668,791	665,501	662,151	671,007	677,954	684,974	692,069	699,238	706,483
Expense Drivers	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Cost of Wholesale Natural Gas, $/kWh	$ 0.061	$ 0.062	$ 0.063	$ 0.065	$ 0.066	$ 0.067	$ 0.069	$ 0.070	$ 0.071	$ 0.073	$ 0.074
Cost of Wholesale Wind, $/kWh	0.061	0.062	0.063	0.065	0.066	0.067	0.069	0.070	0.071	0.073	0.074
Distributed Generation Incentive	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400
System Management, $000/yr	2,437.99	2,486.75	2,536.48	2,587.21	2,638.96	2,691.74	2,745.57	2,800.48	2,856.49	2,913.62	2,971.89
Variable O/M of NGCC Facility, $/mWh	4.181	4.265	4.350	4.437	4.526	4.616	4.709	4.803	4.899	4.997	5.097
Fixed O/M of NGCC, $/kW-yr	17.541	17.892	18.250	18.615	18.987	19.367	19.754	20.149	20.552	20.964	21.383
Fixed O/M of Solar Facility, $/kW-yr	32	32	33	34	34	35	36	36	37	38	39
Maintenance of Distribution System, $000/yr	4,266	4,352	4,439	4,528	4,618	4,711	4,805	4,901	4,999	5,099	5,201
Billing/Customer Service, $/customer	73	75	76	78	79	81	82	84	86	87	89
Transmission Costs, $/kW-yr	38.76	39.54	40.33	41.14	41.96	42.80	43.65	44.53	45.42	46.33	47.25
Fuel, $/kWh	0.0390	0.0398	0.0406	0.0414	0.0422	0.0431	0.0439	0.0448	0.0457	0.0466	0.0476
Efficiency Program, $/kWh	0.0260	0.0260	0.0260	0.0260	0.0260	0.0260	0.0260	0.0260	0.0260	0.0260	0.0260
Distribution System & Stranded Assets											
Purchase of PNM distribution system, $000											
Purchase of PNM stranded assets, $000											
Start-Up Costs, $000											
Distribution System Financing											
Taxable bonded debt interest rate											
Tax-Exempt bonded debt interest rate											
Bond Terms, years	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*	*21*
Tax-exempt bond principal payment (PPMT)	2,449	2,535	2,624	2,715	2,810	2,909	3,011	3,116	3,225	3,338	-
Tax-exempt bond interest payment (PPMT)	1,006	920	831	739	644	546	444	339	230	117	-
Taxable bond principal payment	5,278	5,489	5,708	5,937	6,174	6,421	6,678	6,945	7,223	7,512	-
Taxable bond interest payment	2,535	2,323	2,104	1,876	1,638	1,391	1,134	867	589	300	-
Generation Financing ($000)											
Combined Cycle Plant Principal Payment	2,556	2,646	2,738	2,834	2,933	3,036	3,142	3,252	3,366	3,484	3,606
Combined Cycle Plant Interest Payment	2,031	1,942	1,849	1,753	1,654	1,552	1,445	1,335	1,222	1,104	982
Solar Field Principal Payment	4,941	5,114	5,293	5,478	5,670	5,868	6,074	6,286	6,506	6,734	6,970
Solar Field Interest Payment	4,558	4,385	4,206	4,021	3,829	3,631	3,425	3,213	2,993	2,765	2,529
Depreciation											
Distibution System	5,972	5,972	5,972	5,972	5,972	5,972	5,972	5,972	5,972	5,972	5,972
NGCC Facility	2,508	2,508	2,508	2,508	2,508	2,508	2,508	2,508	2,508	2,508	2,508
Solar Facility	5,192	5,192	5,192	5,192	5,192	5,192	5,192	5,192	5,192	5,192	5,192
Electrical Earnings $(000)	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Operating revenue											
Residential	$ 44,668	$ 45,692	$ 46,731	$ 48,119	$ 48,899	$ 49,954	$ 50,899	$ 51,859	$ 52,870	$ 53,504	$ 54,146
Commercial	43,065	43,626	44,187	44,748	45,771	46,696	47,452	48,386	49,035	49,476	49,921
Total Operating Revenue	87,732	89,318	90,918	92,866	94,669	96,651	98,351	100,245	101,904	102,980	104,067
Operating expenses ($ 000)											
Energy Efficiency Program	4,127	4,318	4,513	4,712	4,914	4,965	5,017	5,069	5,121	5,174	-
Distribution Generation Incentive	10,940	11,670	12,404	13,142	13,882	12,908	13,031	13,156	13,282	13,409	13,538
Cost of Wholesale Energy	4,548	4,652	4,757	4,865	4,976	5,088	5,243	5,404	5,569	5,739	5,914
Cost of Wind Energy	3,866	4,537	5,235	5,961	6,717	8,329	8,677	9,037	9,411	9,798	10,198
System Management	2,438	2,487	2,536	2,587	2,639	2,692	2,746	2,800	2,856	2,914	2,972
Variable O/M of NGCC Facility	2,008	1,994	1,979	1,961	1,941	1,920	1,978	2,039	2,101	2,165	2,231
Fixed O/M of NGCC	1,169	1,193	1,217	1,241	1,266	1,291	1,317	1,343	1,370	1,398	1,426
Fixed O/M of Solar Facility	1,905	1,943	1,982	2,021	2,062	2,103	2,145	2,188	2,231	2,276	2,322
Maintenance of Distribution System	4,266	4,352	4,439	4,528	4,618	4,711	4,805	4,901	4,999	5,099	5,201
Billing & Customer Service	4,679	4,829	4,983	5,142	5,306	5,476	5,650	5,831	6,017	6,209	6,408
Transmission Costs	2,584	2,636	2,689	2,742	2,797	2,853	2,910	2,969	3,028	3,088	3,150
Fuel	18,738	18,607	18,459	18,294	18,111	17,909	18,456	19,020	19,602	20,201	20,819
Depreciation	13,672	13,672	13,672	13,672	13,672	13,672	13,672	13,672	13,672	13,672	13,672
Interest Expense	10,129	9,570	8,990	8,389	7,766	7,119	6,449	5,754	5,033	4,286	3,511

Appendix E- PNM Rates and Demand

2013-2022

Revenue drivers	Est. Growth	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Customers											
Residential	1.20%	51,119	51,732	52,353	52,981	53,617	54,260	54,912	55,570	56,237	56,912
Commercial	0.90%	5,833	5,886	5,939	5,992	6,046	6,101	6,156	6,211	6,267	6,323
Total		56,952	57,618	58,292	58,973	59,663	60,361	61,067	61,781	62,504	63,235
KWH sales per customer (000 kWh)											
Residential	0.86%	6.97	6.89	6.83	6.76	6.70	6.63	6.56	6.49	6.49	6.49
Commercial	0.86%	77.76	76.86	76.22	75.45	74.68	73.91	73.14	72.37	72.37	72.37
Total		84.73	83.75	83.05	82.21	81.37	80.54	79.70	78.86	78.86	78.86
Distributed Generation (MWh)											
Electricity Generated from Customer Base		3,645	4,247	4,865	4,868	4,871	4,875	4,880	4,885	4,939	4,994
Rate, $/ KWH											
Residential	2.66%	$ 0.1150	$ 0.1181	$ 0.1212	$ 0.1244	$ 0.1277	$ 0.1311	$ 0.1346	$ 0.1382	$ 0.1419	$ 0.1456
Commercial	1.97%	$ 0.0960	$ 0.0979	$ 0.0998	$ 0.1018	$ 0.1038	$ 0.1058	$ 0.1079	$ 0.1100	$ 0.1122	$ 0.1144
Gross Demand MWh		810,000	808,999	810,759	811,269	811,867	812,553	813,330	814,197	823,180	832,254
Net Demand MWh		806,355	804,752	805,894	806,401	806,995	807,678	808,450	809,312	818,241	827,261

2023-2033

Revenue drivers	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Customers											
Residential	57,595	58,286	58,986	59,693	60,410	61,135	61,868	62,611	63,362	64,122	64,892
Commercial	6,380	6,438	6,495	6,554	6,613	6,672	6,732	6,793	6,854	6,916	6,978
Total	63,975	64,724	65,481	66,247	67,023	67,807	68,601	69,404	70,216	71,038	71,870
KWH sales per customer (000 kWh)											
Residential	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49
Commercial	72.37	72.37	72.37	72.37	72.37	72.37	72.37	72.37	72.37	72.37	72.37
Total	78.86	78.86	78.86	78.86	78.86	78.86	78.86	78.86	78.86	78.86	78.86
Distributed Generation (MWh)											
Electricity Generated from Customer Base	5,049	5,104	5,160	5,217	5,274	5,332	5,391	5,450	5,510	5,570	5,631
Rate, $/ KWH											
Residential	$ 0.1495	$ 0.1535	$ 0.1576	$ 0.1618	$ 0.1661	$ 0.1705	$ 0.1750	$ 0.1797	$ 0.1845	$ 0.1894	$ 0.1944
Commercial	$ 0.1167	$ 0.1190	$ 0.1213	$ 0.1237	$ 0.1261	$ 0.1286	$ 0.1312	$ 0.1338	$ 0.1364	$ 0.1391	$ 0.1418
Gross Demand MWh	841,423	850,686	860,045	869,500	879,053	888,704	898,455	908,307	918,260	928,316	938,476
Net Demand MWh	836,374	845,582	854,884	864,283	873,778	883,372	893,064	902,857	912,750	922,746	932,845

Appendix F- SFPP Rates vs. PNM Rates

		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Residential ($/kWh)	Scenario 1	0.0951	0.0987	0.1024	0.1061	0.1100	0.1139	0.1180	0.1216	0.1245	0.1275
	Scenario 2	0.0933	0.0969	0.1005	0.1042	0.1079	0.1118	0.1158	0.1197	0.1222	0.1314
	Status Quo	0.1150	0.1181	0.1212	0.1244	0.1277	0.1311	0.1346	0.1382	0.1419	0.1456
Commercial ($/kWh)	Scenario 1	0.0794	0.0819	0.0843	0.0868	0.0894	0.0919	0.0946	0.0968	0.0985	0.1001
	Scenario 2	0.0779	0.0803	0.0827	0.0852	0.0877	0.0903	0.0928	0.0953	0.0966	0.1032
	Status Quo	0.0960	0.0979	0.0998	0.1018	0.1038	0.1058	0.1079	0.1100	0.1122	0.1144

		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Residential ($/kWh)	Scenario 1	0.1305	0.1335	0.1366	0.1397	0.1428	0.1445	0.1467	0.1489	0.1512	0.1536	0.1484
	Scenario 2	0.1338	0.1363	0.1388	0.1423	0.1440	0.1465	0.1475	0.1485	0.1496	0.1496	0.1496
	Status Quo	0.1495	0.1535	0.1576	0.1618	0.1661	0.1705	0.1750	0.1797	0.1845	0.1894	0.1944
Commercial ($/kWh)	Scenario 1	0.1018	0.1035	0.1051	0.1068	0.1085	0.1090	0.1099	0.1109	0.1118	0.1128	0.1083
	Scenario 2	0.1044	0.1056	0.1069	0.1081	0.1104	0.1125	0.1133	0.1145	0.1150	0.1150	0.1150
	Status Quo	0.1167	0.1190	0.1213	0.1237	0.1261	0.1286	0.1312	0.1338	0.1364	0.1391	0.1418