



Economic Impact of Changing Electricity Suppliers in the City of Socorro

In October 2014, Stelzner, Winter, Warburton, Flores, Sanchez & Dawes, P.A. commissioned University of New Mexico's Bureau of Business and Economic Research to conduct an analysis of the potential economic impact of switching electricity suppliers in the City of Socorro. This report presents the results of the study and outlines the data and methods used to arrive at these results.

Summary of Findings

Under existing price structures and based on the assumptions detailed below, a switch of electricity providers from Socorro Electric Cooperative to PNM would result in savings of \$2,118,037 per year to 2,802 households in the City of Socorro (see Table 1). On average, households in Socorro would save of \$755.90 per year. This would include \$182.16 in direct savings resulting from lower residential electricity bills, and an additional \$476.90 in indirect savings passed on by commercial and industrial users who would pay lower electricity costs. Higher-income households, which consume the most electricity, would realize the greatest savings associated with lower electricity rates.

The expenditure of the \$2,118,037 in savings creates 9 new jobs in Socorro County and 6.2 new jobs in other parts of New Mexico; a total of 15.2 new jobs for the entire state. These jobs would result in \$569,698 in labor income to employees in the state, and increase the state's economy output by \$1,730,248 per year. These are recurring impacts – the jobs are permanent and the increases in labor income and output are annual.

Table 1: Economic Impact of Lower Electricity Rates: Socorro County and State of New Mexico

	Employment	Labor Income	Output
Socorro County	9.0	\$252,344	\$931,043
Rest of New Mexico	6.2	\$317,354	\$799,205
State of New Mexico	15.2	\$569,698	\$1,730,248

Data and Methods of Analysis

This analysis is based on data collected from Socorro Electricity Cooperative (SEC) and PNM, and from the Census Bureau’s American Community Survey (ASC) and the Energy Information Agency (EIA).

1. The first step in the analysis is to estimate current expenditures on electricity, paid to SEC, in the City of Socorro. These estimates are summarized in Table 2. According to the Socorro Electric Cooperative 2013 Annual Report, Form 1, SEC provided 70,553 kWh of electricity to 11,227 residential customers in a service area that includes parts of five counties, generating \$10,928,392 in revenues. With a \$15 per month fixed cost, customers paid \$2,022,660 in upfront payments, and \$8,905,732 in marginal (or rate based) payments; thus an average marginal rate of \$0.126/kWh for residential customers. Additionally, SEC provided 71,800,146 kWh of electricity at a cost of \$9,035,956 to 1,582 commercial customers, and 35,746,808 kWh of electricity at a cost of \$3,796,115 to 10 industrial customers. Average rates for commercial and industrial customers are \$0.126/kWh and \$0.106/kWh, respectively.

Table 2: Socorro Electric Cooperative customers, kWh sales and revenues, 2013

	No. of Customers	kWh sales	Revenues:		
			Fixed Rates	Marginal Rates	Total Revenues
Residential	11,237	70,552,806	\$2,022,660	\$8,905,732	\$10,928,392
Commercial	1,582	71,800,146	NA	NA	\$9,035,956
Industrial	10	35,746,808	NA	NA	\$3,796,115
	12,829	178,099,760			\$23,760,463

Source: Socorro Electric Cooperative Annual report, 2013, Form 1.

According to the Census Bureau’s American Community Survey (ACS), 2009-2013 five year estimates, the City of Socorro includes 2,802 households. Estimates for SEC electricity sales to customers in the city are summarized in Table 3. Assuming that consumption in these households is the same as other households in the service area, households in Socorro consume 17,592,682 kWh of electricity and pay \$2,725,047 in revenues; approximately 25 percent of SEC’s residential revenues. Assuming that the same percentage of commercial consumers is also located in the City of Socorro, these establishments consume 17,881,958 kWh of electricity and pay \$2,250,421 in revenues to SEC. This is likely a conservative estimate for this thinly populated area. Finally, we assume that all industrial users (10) are located in the City of Socorro, as there are no other population centers with population greater than 1,500 persons in the SEC service area.

Table 3: Estimated Socorro Electric Cooperative customers, kWh sales and revenues in the City of Socorro, 2013

	No. of Customers	kWh sales	Revenues: Fixed Rates	Revenues: Marginal Rates	Revenues
Residential	2,802	17,592,682	\$504,360	\$2,220,687	\$2,725,047
Commercial	394	17,881,958	NA	NA	\$2,250,421
Industrial	10	35,746,808	NA	NA	\$3,796,115
	3,206	71,221,448			\$8,771,584

Source: Socorro Electric Cooperative Annual report, 2013, Form 1.

2. The second step of the analysis is to estimate projected expenditures for electricity for customers in the City of Socorro, to be paid to PNM following the switch among providers. It is assumed that number of customers and electricity consumption will be unchanged; and that PNM will extend current rates to customers in the City of Socorro. These estimates are summarized in Table 4.

Table 4: Estimated PNM kWh sales and revenues in the City of Socorro, 2013

	No. of Customers	kWh sales	Revenues: Fixed Rates	Revenues: Marginal Rates	Revenues
Residential	2,802	17,592,682	\$168,120	\$2,046,508	\$2,214,628
Commercial	394	17,881,958	NA	NA	\$1,879,277
Industrial	10	35,746,808	NA	NA	\$2,559,641
	3,206	71,221,448			\$6,653,547

Source: www.pnmresources.com

3. The third step is to calculate the total savings to households in City of Socorro as a result of lower rates from PNM. These data are in Table 5 and are simply the difference in revenues collected by SEC (in Table 3) and those projected to be collected by PNM (in Table 4).

Table 5: Estimated savings to households in the City of Socorro, 2013

	Savings from Switching
Residential	\$510,419
Commercial	\$371,144
Industrial	\$1,236,474
Total	\$2,118,037

4. Next, we apportion the savings to households in the City of Socorro according to household income. This combines data from ASC, which provides the number of total households by income in Socorro, and the relative consumption of electricity by households by income. The data and analysis are summarized in Table 6.

Column A shows the number of households in the City of Socorro in nine income categories, according to the ACS (2009-2013 average). Column B shows average household consumption of electricity for New Mexico and Nevada, by the same nine income categories. The source is the Energy Information Agency's most recent Residential Energy Consumption Survey (2009). Column C estimates total electricity consumption, by income category, for Socorro, and column D shows computes the share of total energy consumed by each income category. Finally, column E apportions the savings, calculated in Table 4, to households in the City of Socorro according to income category. Column F is the average savings per household in each income category.

Table 6: Savings to households in the City of Socorro, by income, 2013

Income	A. Socorro Households (ACS)	B. Avg Household kWh (EIA)	C. Socorro Electricity Consumption (kWh)	D. Socorro Electricity Consumption (%)	E. Socorro Savings (\$)	F. Avg Savings (\$)
<10k	356	7,138	2,541,049	9%	\$186,208	\$523
15k	345	8,866	3,058,693	11%	\$224,141	\$650
25k	407	7,746	3,152,716	11%	\$231,031	\$568
35k	375	11,713	4,392,490	15%	\$321,882	\$858
50k	247	9,218	2,276,802	8%	\$166,844	\$675
75k	547	11,649	6,372,163	22%	\$466,952	\$854
100k	234	13,078	3,060,263	11%	\$224,256	\$958
150k	224	13,915	3,116,894	11%	\$228,406	\$1,020
>150k	67	13,915	932,285	3%	\$68,318	\$1,020
	2,802		28,903,356	100%	\$2,118,037	\$756

5. The final step in the analysis is to estimate the economic impact of the expenditure of these savings to Socorro County and the State of New Mexico. Analysis utilizes a standard input-output model, built in IMPLAN. The inputs to the model are the additional spending by households in each income category. IMPLAN uses data on consumption patterns of households, by income, to calculate the number of jobs, labor income and to output that result from new spending.

As detailed above, the expenditure of the \$2,118,037 in savings that results from lower electricity rates creates 9 new jobs in Socorro County and 6.2 new jobs in other parts of New Mexico; a total of 15.2 new jobs for the entire state. These jobs would result in \$569,698 in

labor income to employees in the state each year, and increase the state's economy output by \$1,730,248 per year.

Assumptions

The following is a description of the assumptions used in this analysis.

1. The rates charged by PNM remain unchanged, and are applied equally to new customers in the City of Socorro. Alternatively, it could be assumed that SEC alters its rate structure equally to changes made by PNM.
2. Electricity consumption and price of electricity remain the same in the future.
3. All savings, including those to commercial and industrial users, accrue to households. This, in turn, is based on an assumption that commercial and industrial users work in competitive markets, and thus pass their savings onto their customers in order to remain competitive.
4. The switching of provider imposes no costs to electricity customers. That is, the costs associated with the transfer of infrastructure and equipment from SEC to the City of Socorro or PNM, are not passed onto customers.
5. The expenditures and labor requirements associated with the generation and distribution of electricity to Socorro are the same for PNM and SEC. In the IMPLAN model, this implies that all impacts resulting from the savings are induced; that is, there are no direct or indirect impacts.