

**The Economic Implications of
Navajo Right of Way Fees**

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Section 1: Introduction

The Navajo Nation is a sovereign entity. When it has granted leases or Rights of Way (ROW) in the past, it has typically entered into fixed time period agreements. Twenty-year agreements for leases or ROWs are typical. The most recent long-term ROW agreement between the Navajo Nation and El Paso Natural Gas Company (EPNG) expired on October 17, 2005. The parties are engaged in negotiations to reach another long-term ROW agreement. These negotiations provide the Navajo Nation with the opportunity to remedy any prior agreements that may not reflect at least fair market value, as required by BIA regulations.

The following discussion considers the effect on residential households that might pay higher utility bills if and when the Navajo Nation succeeds in increasing its ROW fees. The focus is on three states: Arizona, California, and Nevada. This analysis will consider both natural gas and electricity bills for households.

A second comparison shows that these ROW fees are quite similar in purpose, but far less than, the taxes that local, county, and state governments typically add to utility bills for the “pipes and wires” utility companies. Energy utility and pipeline companies deliver various energy services across state and local land up to and including the “last mile” of distribution. For example, in California, privately owned (*i.e.*, Investor Owned Utility [IOU]) companies are required to tack on various taxes and public goods charges that add an average of ten percent to each retail customer’s bill. This “end of pipe and wires” tax is many times greater than the proposed Navajo ROW fee, which is used to provide similar Navajo social services. Comparing the amount that state and local governments collect to the fees the Navajo Nation proposes for upstream “pipes and

wires” demonstrates that the Navajo Nation does not seek and would not receive disproportionately large payments. Indeed, just the opposite - Navajo under-recovery - is true. The taxes added to utility bills at the last mile are much more significant than what the Navajo propose.

Section 2: The Current Navajo/EPNG ROW Fee Dispute

In the aggregate, the Navajo Nation has proposed to EPNG a twenty year ROW that would provide about \$22 million per year to the Navajo Nation. EPNG has countered with money and projects that might be worth about \$7 million. For discussion and analytic purposes, this analysis will treat this \$15 million difference as the primary data point.

The EPNG pipeline network across the Navajo Nation consists of pipes between 16, 24, 30, 34, 36, and 42 inches in diameter. The Navajo Nation ROW fee proposal would vary by diameter and length measured in rods (there are 16.5 feet to one rod). In a 2005 agreement with another pipeline, the Navajo Nation entered into an agreement for 30 inch lines of \$1,334 per rod for twenty years and for 36 inch diameter lines of \$1,600 per rod for twenty years. These are approximately equal to \$66.70 per rod per year for 30 inch pipe and \$80 per year for 36 inch pipe.

The \$22 million that the Navajo Nation proposes for EPNG falls between these recently agreed upon rates per rod. This conclusion is based upon the following calculations.

EPNG ROW on the Navajo Nation = about 900 miles

900 miles X 5,280 feet per mile = 4,752,000 feet

4,752,000 feet ÷ 16.5 feet per rod = 288,000 rods

\$22 million per year ÷ 288,000 rods = \$76.39 per rod

Below, in Table 1, I compare the proposals for annual ROW fees.

TABLE 1
Comparison of the Proposals for Annual ROW Fees

	Navajo	EPNG	Difference
Annual	\$22 million	\$7 million	\$15 million
Price per Rod	\$76.39 per rod	\$24.31 per rod	\$52.08 per rod
Price per Linear Foot	\$4.63 per foot	\$1.47 per foot	\$3.16 per foot

Section 3: Residential Natural Gas Consumers

The Navajo Nation seeks about \$15,000,000 more than the amount EPNG has offered for the ROW across the Navajo Nation. This difference represents a small percentage (2.5 percent) increase in EPNG's total cost of service of more than \$600 million.¹ This percentage increase would only apply to the interstate delivery charge. Consumers in Arizona, California, Nevada, and elsewhere typically pay a bundled bill that includes much higher natural gas commodity and local distribution charges. Accordingly, the actual percent increase in the final delivered retail price is shown to be very small, even *de minimis*.

This analysis first determines the effect of the annual difference between the proposed Navajo and EPNG ROW fees on residential energy users in Arizona, California, and Nevada. The most transparent approach is to convert the ROW fees to per unit charges. These will be on a price per therm basis and equal the total dollars paid for ROW differences divided by the annual volume of throughput measured in therms, which are about one tenth of an MCF of natural gas or 100,000 BTUs. At the pipeline, the units of volume are typically based on: (1) a thousand cubic feet (MCF); (2) million BTu (MMBTu); or (3) dekatherms (10 * 100,000 BTu). At the residential bill level, the customer is typically invoiced for volumes of use based on therms (100,000 Btu) of energy.

The EPNG system transports about 3.843 BCF per day,² or about 1,403 BCF per year. There are about 100 CF in a therm of natural gas. Therefore, since 1,403 BCF

¹ The FERC's last Suspension Order used \$607 million for EPNG's cost of service. See *El Paso Natural Gas Company*, Docket No. RP05-422-000, 112 FERC ¶61,150 (July 29, 2005).

² See Prepared Direct Testimony of W. Wayne Tomlinson on behalf of El Paso Natural Gas Company in FERC Docket No. RP05-422-000 (Exhibit EPG-204).

equals 1,403,000,000,000 cubic feet, and at about 1 therm for each 100 cubic feet, 1,403 BCF equals 1,403,000,000 therms.

Using a \$15 million per year ROW fee difference would mean the per therm increase

would be: $\frac{\$15,000,000}{14,030,000,000} = \0.001069 per therm, or 0.1069 cents per therm.

This estimated increase in per therm charges was based upon EPNG’s entire pipeline throughput and is referred to as the “low case.” A more conservative estimate (the “high case”) could be based upon EPNG’s western deliveries into Arizona, California, and Nevada, downstream of the Navajo Nation. This would yield a higher per therm charge using the lesser volumes shown in Table 2 below.

	Cubic Feet per Day	Annual MCF
Arizona	871,000,000	3,179,150,000
California	1,834,000,000	6,694,100,000
Nevada	<u>101,000,000</u>	<u>368,650,000</u>
TOTAL	2,806,000,000	10,241,900,000

¹ Prepared Testimony of W. Wayne Tomlinson in El Paso Natural Gas Company FERC Proceeding, Docket No. RP05-42200.

At \$15,000,000 per year and 10,241,900,000 therms, the additional per therm charge would be:

$\frac{\$15,000,000}{10,241,900,000} = \0.0015 per therm, or 0.15 cents per therm for the high case.

Table 3 shows what the typical residential natural gas user in Arizona, California, and Nevada consumes.

TABLE 3			
Volumes of Use			
	Arizona	California	Nevada
Typical Annual Use	384 therms	533 therms	563 therms
Source: EIA Natural Gas Monthly (April 2006) for 2004 volumes delivered to residential natural gas customers. EIA number of residential natural gas customers by state. Volume of use determined by dividing EIA reported volumes delivered to residential customers by the number of EIA reported residential customers in Arizona, California, and Nevada respectively.			

The effect of the proposed \$15 million increase in Navajo Nation ROW can be estimated by multiplying these volumes of use by the estimated per therm increases for the low and high cases. This is shown in Table 4.

TABLE 4			
Annual ROW Fee Effects			
Using Full System Volumes (.1069¢ per therm per year)			
	Arizona	California	Nevada
Average Residential User	\$0.410	\$0.570	\$0.602
Using Arizona, California, and Nevada Volumes (.15¢ per therm per year)			
	Arizona	California	Nevada
Average Residential User	\$0.576	\$0.800	\$0.845

Table 4 shows that on a system-wide basis, the Navajo Nation ROW would increase prices by about 41 cents per year for Arizona natural gas customers, by about 57 cents per year for California natural gas customers, and by about 60 cents per year for

Nevada natural gas customers. If only Arizona, California, and Nevada volumes are used for the allocation, these increases are “larger” but still minimal. Arizona natural gas customers would pay about 58 cents per year more, California natural gas customers would pay about 80 cents per year more, and Nevada natural gas customers would pay about 85 cents per year more.

Other comparisons are also important. First, the average prices paid in 2005 for fully bundled residential natural gas in Arizona, California, and Nevada are shown in Table 5:

TABLE 5			
	Arizona	California	Nevada
Average Residential Prices ¹	\$1.40 per therm	\$1.33 per therm	\$1.33 per therm
	Western Volumes		
Estimated Increase per Therm (West Only)	\$0.0015 per therm	\$0.0015 per therm	\$0.0015 per therm
Percentage Price Increase	0.107%	0.113%	0.113%
	System Volumes		
Estimated Increase per Therm	\$0.001069 per therm	\$0.001069 per therm	\$0.001069 per therm
Percentage Price Increase	0.076%	0.080%	0.080%
¹ Source: EIA Natural Gas Month April 2006; Table 21. Average Price of Natural Gas Sold to Residential Customers, by State, 2004-2006.			

Table 5 shows that the percentage price increase on a per therm basis is a small fraction of a percent; 0.076% in Arizona and 0.080% in California and Nevada when the \$15 million difference is allocated system-wide. The higher case is about .11% for all three states. However, the percentage price increases are still quite small at miniscule fractions of one percent. For a 0.10 percent increase, a customer who had a gas bill of \$100 would experience an increase of 10 cents.

Section 4: Residential Electricity Customers

Natural gas is also used to generate electricity in Arizona, California, and Nevada. These same per therm price increases would apply to the natural gas component of electricity generation costs. Assume all of any increase in natural gas costs is passed on fully to electricity end users. This would mean that the total cost of electricity would increase in these three states. The following analyses, shown in Table 6, are important to estimate the effect of higher ROW fees on residential electricity users.

	Arizona	California	Nevada
(1) 2005 Annual Natural Gas Used to Generate Electricity ¹	218,111,000 MCF	675,572,000 MCF	148,492,000 MCF
(2) Estimated 2005 Delivered Price per MCF ²	\$7.60/MCF ⁴	\$8.12/MCF	\$7.23/MCF
(3) Total Amount Spent on Natural Gas to Generate Electricity = (1) * (2)	\$1,657,643,600	\$5,485,644,640	\$1,073,597,160
(4) Total Annual Revenue For Electricity ³	\$5,878,168,794	\$34,051,177,157	\$3,468,811,502
(5) Percent of Natural Gas Cost to Total Bills = (3) + (4)	28.20%	16.11%	30.95%

¹ Source: EIA Natural Gas Monthly April 2006, Table 18. Natural Gas deliveries to Electric Power Consumers, by State, 2004-2006

² Source: EIA Natural Gas Monthly April 2006, Table 24. Average Price of Natural Gas Sold to Electric Power Consumers, By State, 2004-2005 (December 2005 Price)

³ Source: EIA Revenue from Retail Sales of Electricity by Sector by Producer (EIA-681) 1990-2004. Electricity revenue is not available for 2005. The 2004 ratio of natural gas cost to 2004 electric revenue has been divided into the 2005 natural gas cost to estimate 2005 electricity revenue.

⁴ Average percent increase in natural gas prices from 2004 to 2005 for California and Nevada was applied to Arizona average natural gas price for 2004 to calculate price for 2005.

The \$15 million per year ROW fee difference discussed above can also be expressed on a dollars per MCF basis as shown in Table 7.

TABLE 7			
Full EPNG System Allocation	=	\$0.001069 per therm	
		X 10	
		<hr/>	
		\$0.01069 per MCF	
Arizona, California and Nevada Allocation	=	\$0.0015 per therm	
		X 10	
		<hr/>	
		\$0.015 per MCF	

Adding these per MCF increases for the \$15 million ROW fee difference to the delivered prices for electric generation would add about one cent per MCF for the low case and about 1.5 cents per MCF for the high case when it is assumed these higher ROW fees would be passed along to electricity generators. This full pass through might not happen in fully competitive wholesale power markets.

Assuming full pass through, the following price effects for the high case are shown in Table 8, and would result in small percentage increases in retail electricity prices.

TABLE 8 The Effect of the \$15 Million Difference on Electricity Bills (High Case)			
	Arizona	California	Nevada
(1) Current Price of Natural Gas ¹	\$7.60 per MCF	\$8.12 per MCF	\$7.23 per MCF
(2) The High Allocation Price Increase for Natural Gas	\$0.015 per MCF	\$0.015 per MCF	\$0.015 per MCF
(3) New Delivered Price (High)	\$7.615 per MCF	\$8.135 per MCF	\$7.245 per MCF
(4) New Annual Amount Paid for Natural Gas	\$7.615/MCF * 218,111,000 MCF	\$8.135/MCF * 675,572,000 MCF	\$7.245 * 148,492,000
(5) Equals	\$1,660,915,265	\$5,495,778,220	\$1,075,824,540
(6) Increase = New Annual Amount (5) Less Amount Shown in (3) in Table 6	\$3,271,665	\$10,133,580	\$2,227,380
(7) Percent Increase in Total Cost of Natural Gas (6) ÷ (5)	0.20%	0.18%	0.21%
(8) Percent Increase in Electricity Bills (6) ÷ (4) in Table 6	0.056%	0.030%	0.064%

¹ Source: EIA Natural Gas Monthly April 2006, Table 24. Average price of Natural Gas Sold to Electric Power Consumers By State, 2004-2005 (December 2005 price).

This means that average electricity bills in Arizona, California, and Nevada would increase by extremely small fractions of a percent: 0.056 percent in Arizona, 0.030

percent in California, and 0.064 percent in Nevada in the high allocation case, and by less if the ROW fee difference is spread across the full EPNG system. This means that if a person had a \$100 electricity bill and it was increased 0.05 percent, this customer would pay 5 cents more.

The low case would be about .7127 (or $0.01069 \div 0.015$) of the high case above. Regardless, the effect on annual residential customers' electricity bills would be very small. Table 9 shows the effect on annual residential bills for the high case for customers using 500 KWH and 1,000 KWH per month.

TABLE 9 Effect on Annual Residential Bills (High Case)			
	Arizona	California	Nevada
Average Current Price ¹	8.02 ¢ per kwh	12.59 ¢ per kwh	10.76¢ per kwh
Price Increase	0.056%	0.030%	0.021%
New Electricity Price	$8.02 \text{ ¢/kwh} * 1.00056 = 8.0255\text{¢/kwh}$	$12.59\text{¢/kwh} * 1.00030 = 12.5938\text{¢/kwh}$	$10.76\text{¢/kwh} * 1.00021 = 10.7623$
Annual Increase in Payment for Typical Use of 500 kwh per month	\$0.330 per year	\$0.228 per year	\$0.138 per year
Annual Increase in Payment for Typical Use of 1000 kwh per month	\$0.660 per year	\$0.456 per year	\$0.276 per year

¹ Source: EIA Average Price of Electricity to Ultimate Customers by End-Use Sector, By State, Table 5.6.A (January 2006)

Section 5: Taxes and ROW Fees

The Navajo Nation uses the ROW fees collected to support social services to more than 200,000 Navajo residents and others living and doing business within the Navajo Reservation. Energy utilities also collect taxes for local governments and pay franchise fees. Some of these utility-based taxes are direct and explicit, such as sales tax and gross receipt taxes that are added to utility bills. Some are also directly stated public goods charges that are intended to promote societal objectives. Others, such as property taxes, are added to the utility company's cost of service and rolled into the pre-sales tax and direct add-on retail prices paid. In addition, utility customers pay federal and state income taxes that are added to the prices paid. The most transparent or direct taxes are utility sales and gross receipt taxes. Table 10 below shows the amount utilities in Arizona, California, and Nevada collect directly from customers for this portion of the annual taxes paid to state and local governments each year. This estimate is only a portion of the utility "taxes" and payments for social programs that retail customers pay to their local utility.³

³ For example, a customer in the City of Glendale, California receiving natural gas from SoCalGas, pays a Public Purpose Surcharge of 0.04858 per therm. Based on an average annual usage of 533 therms, this surcharge equals \$25.89 per year. In addition, the Glendale, California customer pays a 7% City Users Tax on his/her entire gas bill, including the surcharge. This customer would pay a baseline charge of 1.18934 per therm, or \$633.92 per year for the natural gas commodity. The additional \$25.89 for the Public Purpose Surcharge brings the total annual bill to \$659.81. The City tax adds on 7%, or \$46.18. Thus, for natural gas service alone, this typical customer in Glendale, California would pay \$72.07 per year for City Taxes and Public Purpose Surcharges.

Many utilities post information on their websites that helps customers to explain their utility bills. The fees added to gas bills in California range from 5% to 8.5% of the bill. The electric fees range from 8.2% to 13.9% for government taxes and fees.

TABLE 10
Utility Sales and Gross Receipt Taxes

	Arizona	California	Nevada
(1) Per Capita Taxes ¹	\$33.00/year	\$80.00/year	\$66.00/YEAR
(2) Average People per Household ²	2.64	2.87	2.62
(3) Household Utility Sales and Gross Receipt Taxes = (1) * (2)	\$87.12/year	\$229.60/year	\$172.90

¹ Source: The Public Policy Institute of New York State, Utility sales/gross receipts taxes per capita (2002)

² Source: U.S. Census (Arizona Persons per Household 2000; California Persons per Household 2000; Nevada Persons per Household 2000).

Table 11 compares the proposed Navajo Nation ROW increase of \$15 million per year to the Utility Sales and Gross Receipt Taxes in Arizona, California, and Nevada. The obvious conclusion is that the total Navajo Nation ROW fees would likely be less than one percent of comparable *ad valorem* taxes in the end-use states. In addition, there are other state and local taxes that are assessed against these “pipes and wires” utilities.

TABLE 11
Comparison of Navajo ROW Taxes on Utility Customers and
Sales/Gross Receipt Taxes Paid in Arizona, California, and Nevada

	Arizona	California	Nevada
(1) Heating and Water Heater Natural Gas Annual (ROW Fees)(From Table 4			
Low	\$0.410/year	\$0.570/year	\$0.602/year
High	\$0.576/year	\$0.800/year	0.845/year
(2) Electricity at 750 kwh/month (From Table 9)			
Low*	\$0.353/year	\$0.244/year	\$0.148/year
High**	\$0.495/year	\$0.342/year	\$0.207/year
(3) Total Natural Gas and Electric (3) = (1) + (2)			
Low	\$0.763/year	\$0.814/year	\$0.750/year
High	\$1.071/year	\$1.142/year	\$1.052/year
(4) Utility Sales and Gross Receipt Taxes per Household	\$87.12/year	\$229.60/year	\$172.90/year
(5) Percent of Navajo ROW to Utility Sales and Gross Receipt Taxes (5) = (3) ÷ (4)			
Low	0.88%	0.35%	0.43%
High	1.23%	0.50%	0.61%

* Low is equal to 71.27 percent (.01069 ÷ .015) of High

**High is average of 500 and 1,000 kwh cases.

Section 6: Conclusion

The Navajo Nation seeks ROW fees that would mean EPNG would pay \$22 million per year, or about \$15 million above the amount that EPNG offered to pay. The Navajo proposal is consistent with a recent 2005 pipeline ROW agreement with another pipeline.

The percentage change in typical residential natural gas and electricity bills would be very small if the additional \$15 million is paid to the Navajo Nation. For example, assuming the difference is allocated system-wide, the typical natural gas bills would increase 0.076 percent in Arizona and 0.080 percent in California and Nevada. Thus, if the natural gas bill was \$100, a 0.076 percent increase would raise this natural gas bill by 7.6 cents.

The percentage increase in electricity bills in the three states would also be very small. Using the full system allocation that reduces any increase to 0.7127 of the higher “just Arizona/California/Nevada” case would result in a residential electricity bill increase of 0.0399 percent in Arizona, 0.0214 percent in California, and 0.0456 in Nevada. (For example, if an electric customer paid \$100 for electricity and we assume the ROW differential is 0.03 percent, this would raise the bill by 3 cents).

There would be virtually no measurable increase in annual utility bills in Arizona, California or Nevada if the Navajo Nation prevails. Assuming the difference in ROW proposals would be collected on a system wide basis, the combined electricity and natural gas bills increases would be about \$0.763 per year in Arizona, about \$0.814 per year in California, and about \$0.750 per year in Nevada. These increases represent only 0.88%,

0.35%, and 0.43% of each respective state's typical utility sales and gross receipt taxes, assuming ROW fees are collected system-wide.

Even customers that had very high bills for natural gas and electricity Arizona, California, and Nevada would pay only pennies more per month if the Navajo Nation ROW fee is increased to the \$22 million per year that the Navajo Nation proposes.