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Witness: Loan X. Nguyen

PREPARED DIRECT TESTIMONY OF
LOAN X. NGUYEN
SOUTHERN CALIFORNIA GAS COMPANY

September 3, 2003

2005 BIENNIAL COST ALLOCATION PROCEEDING

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PREPARED DIRECT TESTIMONY OF
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A. PURPOSE

The purpose of my testimony is to sponsor the Weighted Average Cost of Gas (WACOG) and alternate fuels (propane and butane) price forecast. These price forecasts are used to develop gas demand forecasts for the residential, commercial, industrial and electric generations markets. The WACOG is also used to calculate the costs for unaccounted for gas and company use fuel that are recorded in SoCalGas' authorized balancing accounts.

B. OVERVIEW

My testimony provides a summary of projected natural gas and alternative fuel price forecasts, details forecasting methodology, compares SoCalGas' forecasts to other forecasts, and provides a brief summary and conclusion.

C. SUMMARY OF GAS PRICE PROJECTION

The table below summarizes the forecast of annual gas prices for the years 2003 through 2006. The 2005 BCAP period is from 2005 through 2006.

Table 1. Summary of Price Forecast

(Nominal $/Dth, excepted as noted)

Gas Prices	**2003**	**2004**	**2005**	**2006**
Core Commodity WACOG	5.18	4.55	4.21	4.28
Other Fuel Prices				
Butane (Wholesale, Los Angeles)	5.29	4.76	4.51	4.60
Propane (Wholesale, Los Angeles)	7.16	6.85	6.57	6.69

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D. DEVELOPMENT AND USE OF GAS AND FUEL PRICE FORECASTS

1) Gas Price Forecasting Model

The natural gas price forecast involves five steps: 1) forecasting the annual price of natural gas at San Juan Basin, 2) converting annual San Juan prices to monthly prices, 3) forecasting annual basin differentials from San Juan gas prices, 4) calculating the California border spot price (CBSP) and, 5) calculating the WACOG for SoCalGas' commodity procurement customers.

Natural gas prices at the San Juan Basin into the El Paso receipt point are forecast first.[1] They serve as the reference price level from which gas prices from other locations are derived. First, I project annual gas prices at the San Juan Basin by escalating on an annual basis the previous year's price using a combination of the Gross Domestic Product (GDP) price inflation index and market "firmness/softness" measure.[2] Second, I calculate monthly gas prices at San Juan by multiplying the historical monthly-to-annual price ratio to the projected annual prices. Basin differentials relative to the San Juan Basin price are then estimated based on the growth of Canadian gas prices relative to San Juan gas prices, reflecting regional competitive conditions and the changing demand and supply situation at each basin. Basin differentials are added to the monthly gas prices at San Juan basin to yield the monthly forecasts at other basins and locations.[3]

Once the basin prices are forecast, I calculate the CBSP by adding three components to San Juan Basin spot price forecast: 1) commodity transportation charges, 2) in-kind pipeline fuel usage costs, and 3) an imputed market value of pipeline capacity to the San Juan Basin. The variable commodity transportation and in-kind pipeline fuel usage charges are the current tariff prices for El Paso Natural Gas (EPNG), the dominant pipeline transporting natural gas to the

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[1] San Juan Basin gas through the El Paso receipt point represents the dominant supply resource for SoCalGas.
[2] "Firmness/Softness" are simply defined with respect to the movement of prices relative to real GDP growth. Market "firmness" simply means that prices have risen relative to real GDP growth while market "softness" means that prices have fallen relative to GDP growth. Determination of market firmness or softness is based on our assessment of the supply and demand factors observed today and expected over the forecast period.
[3] Other basins include Permian (West Texas/Waha area), Canadian (NOVA/Alberta Energy Co./AECO-c), Rockies (Kern River/Opal Plant), Louisiana-Onshore South (Henry Hub), and Northern California (Malin).

southern California border. The imputed market price of pipeline is the average imputed value from 1995-June 2003 excluding 1997 and 2001[4]. After the CBSP is calculated, the WACOG for commodity purchase to serve SoCalGas customers, which is used as an input to the core demand forecast, is calculated as the volume-weighted average of commodity prices at the California border. The weighting is based on the core supply mix (border and basin) during year 8 (April 2001 to March 2002) of the Gas Cost Incentive Mechanism (GCIM.)

2) Determinants of the Gas Price Forecast

This section briefly describes general market conditions thought to influence gas price. The availability of adequate natural gas supplies at competitive prices to meet growth in demand will be the driving factor for the near-term market conditions. According to Federal Reserve Chairman Alan Greenspan, "Today's tight natural gas markets have been a long time in coming, and distant future prices suggest that we are not apt to return to earlier periods of relative abundance and low prices anytime soon."[5] U.S. gas production losses remain concentrated in the mature locations, particularly the shallow Gulf of Mexico[6], and the losses are offsetting gains elsewhere in the U.S. Despite a recovery of drilling activity, production remains stagnant due to decreasing rig yield and higher depletion rate. The Energy Information Administration (EIA) expects growing dependence on new, large-volume natural gas supply projects such as deepwater offshore well, liquefied natural gas (LNG) facilities, Mackenzie Delta pipeline, and Alaskan pipeline in order to meet future demand.[7] Imports from Canada are also dropping as Canada also faces similar problems due to decline in production and its own demand. Overall natural gas production including imports is expected to grow at 1.3% per year from 2002 to 2007.[8]

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[4] Years with low (1997) and high (2001) imputed values were excluded from the average.
[5] Testimony of Federal Reserve Chairman Alan Greenspan on natural gas supply before the Senate Committee on Energy and Natural Resources in Washington, D.C. on July 10, 2003.
[6] North American Gas Production Monthly – PIRA – May 2003. Shallow water Gulf of Mexico U.S. production in 2002 was 9.26 Bcf/D, down from 12.98 Bcf/D in 1998.
[7] EIA Annual Energy Outlook 2003, Report # DOE/EIA-0383 (2003). January 9, 2003. http://www.eia.doe.gov/oiaf/aeo/pdf/0383(2003).pdf.
[8] EIA Annual Energy Outlook 2003, Report # DOE/EIA-0383 (2003). January 9, 2003.

On the other hand, the growth prospects for U.S. natural gas demand over the next few years are expected to increase at an annual rate of 1.8%.[9] The continued strength in gas demand is expected to come from increasing demand for gas-fired electric generation. Nearly 64% of all planned new power generation capacity in this country, and almost all in California, will be gas fired. Furthermore, more than 130,000 MW of new generation in the U.S. that use natural gas as the primary fuel source was added since 2001.[10] As reported by SoCalGas witness Luis Pando in his testimony, many of these new units are replacing older, less efficient gas-fired plants. Nevertheless, natural gas is projected to account for over 17.5% of total U.S. power generation fuel mix by 2006, compared to less than 14.2% in 2000.[11] Gas prices for the rest of 2003 and early 2004 are expected to be high due to strong pressure to replenish storage caused by the unusual cold 2002-2003 winter in the Northeast. Natural gas prices are also expected to be more volatile than in the past because of the tight market. A hot summer or a cold winter can drive prices up sharply but fuel substitution, industrial demand reduction, and energy conservation can also moderate this affect. Overall, high production cost to meet increasing gas demand is expected to support the level of the natural gas price range shown in my Table 1, above.

3) <u>Alternate Fuel Prices</u>

The forecast in Table l for Los Angeles Basin wholesale butane and propane prices are based in part on a report prepared for SoCalGas by Foster Associates, Inc. (the report is included as Attachment A). I adopted Foster's formally suggested methodology to estimate alternate fuel prices, but recalibrated the alternate fuel price forecasts using SoCalGas' assumption of economic growth and outlook for natural gas prices in the West Texas/Permian Basin area.

The price of Kern River crude oil is an indicator of potential profitability for operators of enhanced oil recovery projects – a significant source of natural gas demand – in Southern California. Foster Associates, Inc. also developed a forecast for Kern River crude oil prices for

[9] EIA Annual Energy Outlook 2003, Report # DOE/EIA-0383 (2003). January 9, 2003.
[10] Platts Newgen, June 2003.
[11] EIA Annual Energy Outlook 2003, Report # DOE/EIA-0383 (2003). January 9, 2003. Table 73.

SoCalGas. This forecast is included in the Foster Associates, Inc. report that is in Attachment A hereto.

E. COMPARISON TO OTHER NATURAL GAS AND ALTERNATIVE FUEL PRICE FORECASTS

Tables 2 and 3 below compare my forecasts of the natural gas prices at Henry Hub[12] and the West Texas Intermediate (WTI) crude oil price,[13] to several available forecasts made by Energy Information Administration (EIA), Petroleum Industry Research Association (PIRA), Global Insight (formerly DRI-WEFA) and the NYMEX futures, among others, for various years in the 2002 to 2006 period. As shown, there is general consensus among these forecasters' expectation for a steep price increase 2003 due to the conditions described in Section D.2, then slightly lower prices from 2004 to 2006. That is, most market observers expect natural gas prices to firm up due to supply pressure in 2003, then ease during the 2005 BCAP period.

Crude oil prices are determined largely by the international market and production in OPEC and non-OPEC nations. Oil prices are expected to be volatile in 2003 due the conflict in Iraq, but real prices are expected to fall from 2003 levels once the market stabilizes. Despite year-to-year variations, SoCalGas' forecasts follow the same general trend toward gas prices in the same range as the other forecast providers.

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[12] My forecast of natural gas prices at Henry Hub are in my workpapers.
[13] From the Fosters Associates, Inc. report in Attachment A.

Table 2. Comparison of Natural Gas Price Forecasts

Henry Hub Spot $/Dth, excepted as noted

Gas Prices	**2002**	**2003**	**2004**	**2005**	**2006**
SoCalGas	3.35	5.77	4.78	4.45	4.52
EIA a/	3.22	5.39	4.75	N/A	N/A
Futures b/	N/A	5.67	4.92	4.66	4.64
PIRA c/	3.36	6.09	5.04	3.95	4.15
Global Insight d/	3.33	5.95	4.87	4.28	3.72
CEC e/	3.36	3.34	3.42	3.50	3.58

Note and Sources:

a/ EIA - Energy Information Administration – Short-Term Energy Outlook – Jul. 2003 http://www.eia.doe.gov/emeu/steo/pub/pdf/jul03.pdf. Henry Hub approximation = Wellhead * 1.108 (Henry Hub premium) / 1.02 (Mcf to Dth conversion factor) http://www.eia.doe.gov/oiaf/analysispaper/henryhub/index.html.

b/ NYMEX futures settlement on 7/6/2003.

c/ PIRA Energy Group - Natural Gas Bidweek Prices – July 2003.

d/ Global Insight (formerly DRI-WEFA) - Natural Gas Monthly – July 2003.

e/ California Energy Commission – Preliminary Natural Market Assessment - May 27, 2003. http://www.energy.ca.gov/energypolicy/documents/2003-06-11_workshop/2003-06-03_100-03-006SR.pdf. Southern California border price adjusted to real dollar from 2000 constant dollar.

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Table 3. Comparison of Crude Oil Price Forecast (WTI)

Figures in Nominal $/Bbl, except as noted)

Gas Prices	**2003**	**2004**	**2005**	**2006**
SoCalGas a/	28.89	24.38	23.14	23.32
EIA b/	30.65	27.25	N/A	N/A
PIRA c/	30.25	26.15	25.00	25.00
Global Insight d/	28.90	23.82	24.79	25.61

Note and Sources:

a/ SoCalGas - Foster Associates - In 2003 dollar.

b/ Energy Information Administration July 2003 Short-Term Energy Outlook http://www.eia.doe.gov/emeu/steo/pub/pdf/jul03.pdf.

c/ PIRA Energy Group - Long-Term Oil Prices Forecast – July 2003.

d/ Global Insight (formerly DRI-WEFA). Natural Gas Monthly – June 2003.

F. SUMMARY AND CONCLUSIONS

Declining net U.S. supply and a resurgence in the use of natural gas for electric generation should lead to upward pressure on gas prices. For the BCAP period of January 1, 2005 through December 31, 2006, prices are expected to be in the $4.25 range. This price level is in line with other available forecasts and with the underlying fundamentals, i.e., supply and demand factors, of the natural gas market.

This concludes my testimony.

G. QUALIFICATIONS

My name is Loan X. Nguyen. My business address is 555 West Fifth Street, Los Angeles, California 90013.

I am employed by Southern California Gas Company (SoCalGas) as a Senior Market Advisor in the Market Analysis and Strategy group of the Major Markets Customer Services department. My responsibilities include analyzing and forecasting natural gas and alternate fuel prices. I graduated from the University of California at San Diego in 1984 with a Bachelor of Arts degree in Management Science. I joined SoCalGas in 1984 and have held positions of increasing responsibility in the Regulatory Affairs and Customer Services departments.

ATTACHMENT A