

## Natural Gas Service for Rural San Joaquin Valley Disadvantaged Communities

### Proposal:

Identify community locations; estimate costs for service; investigate financing methods and secure resources to extend natural gas service to unserved rural disadvantaged communities in San Joaquin Valley counties.

### Rationale:

Natural gas is a more affordable, safer and a healthier fuel for residential use than other alternative heating sources. Natural Gas is now seen as a dependable energy source for the country because of its abundance and air quality advantages over other fuels at the end user point.

The following are a few San Joaquin Valley communities currently not served by natural gas:

#### Valley floor

Community	Annual MHI <sup>(1)</sup>	% SMHI <sup>(2)</sup>	% Poverty <sup>(3)</sup>	Dwellings	Population	School	County	Utility Service Area
Allensworth*	\$23,594 +/- \$8,044	38.4%	54.0 +/- 17.6%	142	471	Yes	Tulare	SoCal Gas
Ducor	\$33,594 +/- \$14,501	54.7%	36.4 +/- 18.3%	154	612	Yes	Tulare	SoCal Gas
Lindcove**	\$44,844 +/- \$22,459	73.0%	37.2 +/- 19.4%	140	406	No	Tulare	SoCal Gas
Seville***	\$14,000	29.5%	31.2 +/- 19.0%	115	480	Yes	Tulare	SoCal Gas
West Goshen****	\$21,000	34.2%	82.0 +/- 28.1%	143	511	No	Tulare	SoCal Gas
La Vina	\$31,161 +/- \$26,896	50.8%	23.6 +/- 29.5%	150	700	Yes	Madera	PG&E
Le Grand	\$37,095 +/- \$4,969	60.4%	25.0 +/- 4.7%	503	1,659	Yes	Merced	PG&E

(1) Annual Median Household Income from 2008-12 American Community Survey indicating margin of error

(2) Percent of Statewide Median Household Income from 2008-12 American Community Survey indicating margin of error

(3) Percent of Individuals in Community in living in Poverty from 2008-12 American Community Survey indicating margin of error

\* Allensworth is also the site of a State Historic Park

\*\* Lindcove is the site of the UC Citrus Research and Extension Center

\*\*\* MHI from 2007 SHE/CSUF Survey

\*\*\*\* MHI from 2013 RCAC/SHE Survey

#### Foothills and Sierra Nevada Mountains

Our understanding is that few if any foothill and mountain communities receive natural gas service. For example, there are a number of disadvantaged communities in the Lake Isabella area of Kern County that are miles away from natural gas pipelines.

### Affordability:

In order to understand the importance of the extension of natural gas service to rural disadvantaged communities, it is essential to look at the affordability as well as the health and safety aspects

associated with alternate heating sources. Propane is the most common alternate source. The relatively high cost of propane gas has meant that residents in many rural communities have become dependent on wood stoves to supply heat to their homes.

The cost of propane varies widely with usually the more remote communities paying a higher price due to delivery costs for propane providers. A quick survey of propane companies in December 2013 in the area indicated prices of from \$2.65 to \$3.25 per gallon with a minimum 100 gallon delivery for residents that either own or lease a large propane tank. Smaller deliveries and filling of small tanks can be more costly. This compares to purchases of natural gas within baseline allowances of roughly a dollar a therm. Higher usage in the tiered natural gas pricing structure is charged a higher unit price. (A gallon of propane produces roughly 92% the equivalent heating energy of a therm of natural gas). Another pricing advantage of natural gas service for low-income households is the "CARE" program which reduces the price of natural gas service by 20%.

The substantially decreased heating cost from natural gas allows rural disadvantaged community residents to spend less of their incomes for heating and cooking. This alleviates, if only to a small extent, the poverty in which many families live, allowing more cash for other necessities including covering other utility costs such as water. The extension of natural gas into rural disadvantaged communities will, without a doubt, have a significant impact on the quality of life for their residents.

#### **Safety Issues:**

In communities where natural gas is not available, residents utilize propane, wood and electricity to heat their homes, food and water. Each of these methods of heating has its own benefits and issues.

#### Propane

The use of propane gas for heating and cooking in the home can have its issues. When the propane tank empties, in older model appliances, the flow of gas may become insufficient to keep the pilot light lit with a small amount of gas flowing into the stove and/or heater after the expiration of the pilot light. Because the specific gravity of propane is heavier than that of air, the propane tends to accumulate at floor level rather than dissipating into the air. When natural gas leaks occur there is less likelihood for the gas to accumulate or buildup. Because of natural gas's lower specific gravity than air, it tends to rise, expand and dissipate.

Many families own or lease tanks large enough to warrant delivery by the propane companies servicing their areas. However, some families depend on smaller portable propane tanks. Those residents transport their empty tanks to nearby facilities risking leaks and lifting injuries.

For those families that run out of propane, days can pass before the tank is refilled -- either because of lack of transportation or assistance in moving the tanks, or because the residents must await the response of the propane companies in the area. This is particularly true if the propane companies are not contacted before a weekend starts. During the cold winter months, several days without heat or warm meals poses a serious threat to the health of the elderly and disabled, as well as to those families with small children.

## Wood

It is not uncommon to find wood stoves in communities that lack natural gas. Wood stoves provide a relatively more dangerous form of home heating. The risk of fire is greater, especially in wood sheath homes and mobile homes that characterize rural homes in the San Joaquin Valley. Another safety hazard posed by the use of wood for heating is related to moving wood from the woodpile to the stove or hearth the elderly and disabled increasing the potential for injuries and falls.

## Electric Space Heaters

Electric space heaters are much safer now than they used to be. However, many old houses and mobile homes in rural disadvantaged communities have antiquated wiring systems, some in disrepair and inadequate to handle the high amperage required by electric heaters. These electric heaters, utilized in conjunction with other home appliances, can create a dangerous overload on the circuits, exacerbating the risk of fire.

### **Heath Issues:**

With air pollution concerns in the San Joaquin Valley, natural gas provides a healthier method of heating homes in cold winter months than burning wood. The Valley's air ranks as some of nation's worst for PM 2.5. Wood and diesel smoke are the biggest direct sources of PM-2.5 specks in the Valley. Smoke from fireplaces and wood stoves is a particular threat to Valley residents because wood smoke may hang in the air for hours in neighborhoods.

Medical research shows the tiny specks in the smoke carry many chemicals into the bloodstream. Some, such as benzopyrene and chrysene, are considered carcinogenic. PM-2.5 pollution is blamed for 800 premature Valley deaths each year. A study from California State University, Fullerton, found two-thirds of Valley residents are exposed to unhealthy levels of PM-2.5.

If it hasn't already been done, perhaps an analysis by the ARB or the San Joaquin Valley Air Pollution Control District could be conducted to determine the beneficial impact on air quality (of not burning wood) by providing natural gas service to currently unserved remote communities.

### **Summary:**

Natural Gas is now seen as a dependable energy source for the country because of its abundance and air quality advantages over other fuels at the end user point. The energy industry is big business and the tremendous profits in the energy industry are partially generated from sales of natural gas. Let's share the benefits of this great energy source with remote rural disadvantaged communities.