

DOCKETED

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Comment Received From: Nehemiah Stone

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Accounting for costs of Gas Infrastructure

i filed this once, but the site seemed to expect me to do so again. Apologies is this is redundant.

Additional submitted attachment is included below.



California Energy Commission
Building Standards Office
1516 Ninth St.
Sacramento, CA

**Re: 2019 Building Energy Efficiency Standards Development
Docket # 16-BSTD-06**

April 21, 2017

Dear Christopher Meyers,

Stone Energy Associates appreciates the opportunity to submit comments related to the development of the 2019 Building Energy Efficiency Standards.

As the Commission and the utilities perform cost effectiveness analysis for each CASE proposal and potential measure for the 2019 Standards, it has stated the goal of being fuel neutral. To accomplish that the Commission should include all incremental costs for measures under consideration. Because electricity is required for all buildings (with possible rare exceptions), the cost of electrical service to a building is not incremental for any measures. Incremental line (wire) sizing, additional breakers, and additional wiring should be considered, but everything outside of the building is a basic requirement.

Since all-electric buildings are an option, the cost of providing natural gas service should be accounted for in the cost effectiveness analysis for gas water heating and gas space heating in dual-fuel buildings. To ignore that cost when gas appliances are not essential, favors gas rather than being fuel neutral.

As pointed out by Commissioner Hochschild in an article in the San Francisco Chronicle (May 20, 2016), progressive builders have already discovered that it is less expensive to build new homes without gas service. "By avoiding the need to install gas pipelines under the streets and inside homes, these forward-thinking builders are able to reduce the price of the home by \$4,500," according to Hochschild.

The gas infrastructure costs can be thought of as falling within one of four categories:

- Distribution main lines under the street,
- Gas meter and connection to the main,
- Gas piping within the building, and
- Exhaust venting.

Some data may be available that would allow the Commission to separate the cost of extending gas distribution lines from the cost of a connection to the main and installation of the gas meter.

Nehemiah Stone
916 633-1225
nehemiah@
StoneEnergyAssc.com




P.O. Box 324
Loomis, CA 95650

www.StoneEnergyAssc.com

The preponderance of data we have been able to gather combines those two costs. The table below shows that there is a wide range in costs. The two contractor quotes are for trenching and piping between the main and the building, but do not include the utility company's price for connecting the main and installing the meter. EPRI's estimate was intentionally conservative.

Price Quote	Source
\$8841 (single-family)	Palo Alto
\$17,634 (8-unit MF)	Palo Alto
\$1000 (single-family)	EPRI for SMUD
\$600 (per unit of MF)	Contractor quote, north coast
\$2000 (per bldg. of MF)	Contractor quote, north coast
\$14,768 (single-family)	PG&E, Richmond
\$10,000 (MF)	Pasadena

The most complete costing available to us is the PG&E contract proposal in Richmond.



Residential Rule 16 Gas and Electric Single Service Extensions*

November 21, 2016

[Redacted Address] LAFAYETTE, CA 94549

Dear [Redacted Name],

We are writing to let you know Pacific Gas and Electric Company (PG&E) will extend its facilities to provide residential gas and electric service to the project address listed above. This letter, including PG&E's tariffs, which are incorporated by reference below, will serve as our contract. As required by the California Public Utilities Commission (CPUC), special facilities will be handled in a separate contract. Please complete the following three steps to execute this contract.

For Internal Use

Notification # [Redacted]

Contract # [Redacted]

E-PM # [Redacted]

G-PM # [Redacted]

Prior MLX/PM# [Redacted]

Cust # [Redacted]

Re: [Redacted] RICHMOND, 94801

1 Review the following project cost summary information.

	GAS	ELECTRIC
Total Service Costs	\$14,768.82	\$0.00
Residential allowance, a CPUC-approved credit applied to the cost of the job	-	\$0.00
Advance payment credit	-	\$0.00
Subtotal:	\$11,770.82	\$0.00
Total Due (gas and electric)	\$11,770.82	

All amounts include the Income Tax Component of Contribution (ITCC) PG&E is required to charge customers, where applicable.

ADDITIONAL INFORMATION

What is the SACAC form?
Under PG&E's Rule 16, you have a choice: you can perform the work yourself, hire a qualified contractor to perform the work or hire PG&E to do the work. We are required by the CPUC to provide you with PG&E's costs.

This form identifies our cost for the refundable service that is PG&E's responsibility to install. PG&E's costs were developed based on your choices within the application and may change if you change that choice.

How do I fill out the SACAC?
If you want to do this work yourself or have a qualified contractor do this work, please enter your estimated costs in the section of the SACAC form.

Cost estimates for installing gas piping within residential buildings varies nearly as much as the costs for getting the gas to the building. Some of the estimates are derived from estimating web sites, and some are quotes from plumbing contractors on specific projects.

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916 633-1225
 nehemiah@
 StoneEnergyAssc.com



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 Loomis, CA 95650
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Price Quote/Estimate	Source
\$578 - \$718 (single family)	Homewyse Web Site
\$300 - \$1000 (single family)	Costhelper.com
\$259 - \$733 (single family)	homeadvisor.com
\$200 - \$500 (single family)	Fixr.com
\$550 (single family)	EPRI for SMUD
\$200/fixture (MF)	Contractor quote, north coast
\$200-\$300/fxtr. (MF)	Contractor quote, Pasadena

For a 40-unit apartment building where each unit has a gas water heater, gas furnace, and gas stove, the contractor quotes result in a cost between \$24,000 and \$36,000. While the cost of additional wiring to install heat pumps and an electric stove must be considered, in comparison, those costs are much lower (roughly 1/3 lower by some estimates).

KB Homes and City Ventures provided the Commission with a combined-cost figure of \$4500 net savings per single family home for going all-electric. Redwood Energy's experience with multifamily projects is that the net cost savings per unit for avoiding gas infrastructure in multifamily new construction ranges between \$2000 and \$3000 per dwelling unit.

These data should be considered indicative of the need to better understand the true costs of gas water heating and gas space heating. Though some of the data points are actual bids, the data set is not large enough to be considered definitive. The Commission should gather more data from more regions of the State, and across a wider range of building types and builders.

In light of the tragedy at San Bruno, the explosion in Woodside the next year, one in Fresno two years ago, a gas line explosion in Stanislaus County last year, and two gas (propane) explosions near Kirkwood in March of this year, as well as the climate impacts associated with burning gas and fugitive emissions from gas pipelines and storage like Aliso Canyon, it is important that the Standards not favor dual-fuel construction by ignoring some of the costs.

Therefore, Stone Energy Associates respectfully requests that the Building Standards Office:

1. Include the cost of all gas infrastructure in cost-effectiveness analysis while evaluating CASE proposals,
2. Base analysis on an independent evaluation of the costs of bringing natural gas down the street, piping from the main to buildings, and piping within the building, and
3. Consider including risk values for fires and explosions caused by either electrical service or natural gas service.

Thank you for considering these comments. Please let me know if any clarification is needed.

Sincerely,



Nehemiah Stone

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