DOCKETED	
Docket Number:	18-IEPR-09
Project Title:	Decarbonizing Buildings
TN #:	224012
Document Title:	The cost of gas infrastructure
Description:	N/A
Filer:	System
Organization:	Sean Armstrong
Submitter Role:	Public
Submission Date:	6/29/2018 1:38:50 AM
Docketed Date:	6/29/2018

Comment Received From: Sean Armstrong
Submitted On: 6/29/2018
Docket Number: 18-IEPR-09

The cost of gas infrastructure

Honorable Commissioners,

The cost of gas infrastructure is extraordinary. PG&E and SoCalGas both submitted costs in Spring of 2018 to the CPUC for installing new gas mainlines to 11 towns in the San Joaquin Valley. They ranged from $7,380/Service in California City to $86,198/Service in Selma, with an average of $24,236/Service. Analyzed by mile of piping, costs ranged from $810,000/mile to $3,166,667/mile with an average of $1,400,000/mile.

Coincidentally Redwood Energy supported the ZNE design of 48 new all-electric homes in Selma (cover article of Home Energy Magazine, fall 2016), one of the towns in the San Joaquin pilot study. Each house was provided with a 100% solar offset 4kW array ($10,000 before incentives), Prescriptive Code shell measures, and efficient heat pump HVAC and DHW, which cost ~$3000 more than Federal Minimum products. For a total cost of $13,000/residence we achieved Zero Net Energy, about half as much as installing a gas service.

It is a fact that gas piping leaks above 3%, which makes it significantly worse for climate change gas than burning coal. Even domestic hot water leaks at 9% (AWWA, 2016), primarily due to infrequent but catastrophic failures. This same phenomenon is found in the methane system, but methane is invisible and scentless unless it has odors added. These leaks, large and small, cost rate-payers money and accelerate climate change over the 9 year lifespan of methane in our atmosphere, during which it is doing the work of 170 particles of CO2.

As I have seen twice this year on my street, fixing methane leaks in the street requires mobilizing 6+ skilled staff, backhoe and multiple utility trucks; closing a city street; using a backhoe to dig 6' deep into a city street; welding on live gas piping at considerable danger to the welders and considerable cost to rate-payers; and repaving the street. The cost of labor, equipment and repaving must be in excess of $10,000/leak.

It is a fact that these natural gas pipelines will be abandoned in the coming three decades, and likely sooner, if California responsibly implements its greenhouse gas pollution laws. These 40+ year investments will be wasted, and burden ratepayers and investors with the poor decision making we make today.

Given the extraordinary cost to build and maintain natural gas pipelines, it is the fiscally prudent path to electrify homes at every opportunity and shut down wastefully expensive natural gas pipelines. It is the CEC's fiduciary responsibility via the Warren-Alquist Act to perform your decision making process to benefit ratepayers, and it is clear beyond question that natural gas is more expensive than electricity when infrastructure costs are included.

Please take quick steps to eliminate natural gas costs from our economy and limit natural gas's

impact on our society via climate change.

Sincerely,
Sean Armstrong
Redwood Energy