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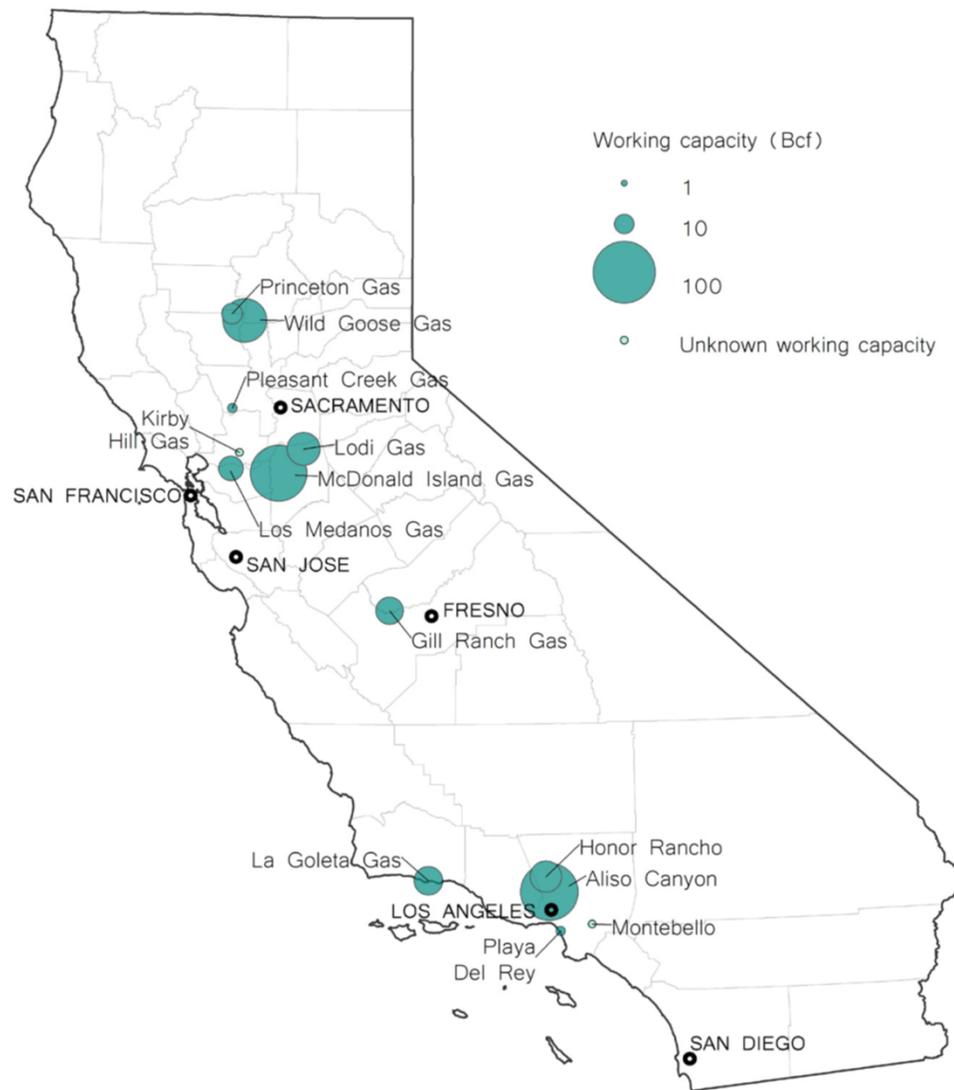
CPUC's Aliso Canyon Order Instituting Investigation (I.17-02-002)

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California Public
Utilities Commission

I.17-02-002 Aliso Canyon Proceeding: Phases 2 and 3



Long, J. et al. Long-Term Viability of Underground Natural Gas Storage in California. California Council on Science and Technology (2018).

Aliso Canyon OII Phase 2: Overview

- The CPUC opened Investigation, I.17-02-002, to assess the feasibility of minimizing or eliminating Aliso Canyon while still maintaining energy reliability and just and reasonable rates.
- Modeling inputs incorporate all of California's current climate goals and the current assumptions about future electricity procurement in the Integrated Resources Plan.
- Modeling results indicate that Aliso Canyon cannot yet be eliminated without jeopardizing gas and electric reliability and customer rates given current rules and infrastructure.
- These results will inform the CPUC's Phase 2 Decision.

Aliso Canyon: Phase 2 Modeling Results

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|---|---|---|
| <ul style="list-style-type: none">• Volatility Analysis: Gas prices became more volatile in 2017 and more so in 2018.• Difference in Differences Study: Total impact of the loss of Aliso Canyon on SoCalGas core customers averaged \$102M /year from 2016-18.• Implied Market Heat Rate (IMHR) and Excess Electric Costs Study: Electric customers paid \$916M in excess power costs in 2018. | <ul style="list-style-type: none">• Assessed whether eliminating Aliso would cause significant reliability impacts.• Showed that there would be significant reliability concerns if electric generators were curtailed to Minimum Local Gen level.• Electric costs estimated to increase if electric generation was curtailed due to increased power imports. | <ul style="list-style-type: none">• Summer peak demand could be met without Aliso in 2020, 2025, and 2030.• Aliso is not needed to meet reliability under 1-in-35 winter extreme peak day conditions.• Aliso is needed for reliability under 1-in-10 winter peak demand conditions.• Results suggest three potential max. allowable Aliso inventory levels:<ul style="list-style-type: none">• 41.2 Bcf, 54.9 Bcf, or 68.6 Bcf |
|---|---|---|

Aliso Canyon Proceeding, Phase 3: Overview

- Purpose: Assess potential for replacement of Aliso Canyon storage field in 2027-2045
- Analysis contracted out to FTI Consulting, Inc
 - Draft baseline analysis completed: hydraulic modeling of 2027 and 2035 winter day gas shortfall without Aliso Canyon
 - Cost-benefit analysis in progress: 20-year economic analysis of 5 “portfolios” of resources to replace Aliso
 - Software: GPCM, PLEXOS
 - Demand: 2020 CA Gas Report
 - Draft results and report forthcoming at workshops later this summer/fall

Aliso Canyon Proceeding, Phase 3: Preliminary Results

- Selected preliminary results from FTI's analysis:
 - Non-Aliso Canyon gas storage fields are sufficient to meet seasonal (monthly average) gas demand in 2027-2028 and beyond, even in a cold year
 - Based on monthly gas balance analysis shown in March 30 workshop
 - Aliso Canyon or replacement resources are needed to meet gas demand on a forecasted 1-in-10 winter peak demand day in 2027 and 2035

Aliso Canyon Proceeding, Phase 3: Portfolios

	GAS INVESTMENTS		ELECTRIC INVESTMENTS		
Target	2027: 434 MMcf/d 2035: 318 MMcf/d		2027: 4,768 MW 2035: 2,866 MW		
	Gas Transmission	Demand Reduction	IRP Mix	Electric Transmission	TBD
Design	Make investments to restore the SCG Northern Zone plus additional increase to the Southern Zone, if necessary. Review interconnection and upstream capacities. Costs based on utility filings to CPUC and other public datasets.	Expansion of gas-side activities plus new investments assumes significant regulatory support from CPUC, mandates from AB3232, and others. Gas-only, based on analysis of current programs plus public planning studies.	Incremental demand response, storage, and renewables added in the same ratio as shown in the current IRP. New builds are scaled <i>pro rata</i> in order to close the MW gap. No new thermal generation is included.	Close the MW gap by adding new electric transmission capability into CA. Scaled up projects that are currently under development. Includes 2035 ISD only since long build times may challenge a 2027 ISD.	A fifth portfolio is to be defined following analysis of the first four infrastructure portfolios based on the results of their analysis. May be a combination of tested portfolios or a new and unrelated investment.

Includes the addition of the electric transmission portfolio, which was added in response to comments received during and after the November Workshop.

Slide 7 of 17, the March 20 workshop presentation, available at <https://www.cpuc.ca.gov/aliso01/>.