

**Southern California Gas Company
2024 TCAP**

H2 Fueling Station Rate (G-FCEV)

Workpapers to the Prepared Written Testimony of Edwin Harte

2024 TCAP

H2 Fueling Station Revenue Requirement

Description	Electrolysis Costs		Electrolysis (100% Renewable)		SMR (100% Renewable)		Liquid Transport		Data Source
	\$000s	\$/kg	\$000s	\$/kg	\$000s	\$/kg	\$000s	\$/kg	
H2 Station Capital Cost	\$29,163	-	\$29,163	-	\$30,744	-	\$12,339	-	Black and Veatch report, "Phase 1A Report, SoCal Gas Hydrogen Station Cost Study", August 29, 2022, Table 1-1
Capital Assumption for Rates (%)	50%		50%		50%		50%		
H2 Station Rate Base	\$14,582	-	\$14,582	-	\$15,372	-	\$6,170	-	
Rate of Return (%)	7.30%	-	7.30%	-	7.30%	-	7.30%	-	Return tab
Return on Ratebase	\$1,064	\$2.43	\$1,064	\$2.43	\$1,122	\$2.56	\$450	\$1.03	
Income Taxes	\$206	\$0.47	\$206	\$0.47	\$217	\$0.50	\$87	\$0.20	Return Tab
Ad Valorem Taxes	\$109	\$0.25	\$109	\$0.25	\$115	\$0.26	\$46	\$0.11	Return Tab
Depreciation Expense	\$0	\$0.00	\$0	\$0.00	\$0	\$0.00	\$0	\$0.00	New station, no depreciation expense
Capital Related Revenue Requirement	\$1,379	\$3.15	\$1,379	\$3.15	\$1,454	\$3.32	\$583	\$1.33	
O&M Expense	\$1,020	-	\$1,020	-	\$810	-	\$490	-	Black and Veatch report, "Phase 1A Report, SoCal Gas Hydrogen Station Cost Study", August 29, 2022, Table 4-3
O&M Loader (%)	23.22%		23.22%		23.22%		23.22%		O&M loader provided by Financial Accounting
Fully Loaded O&M Expense	1,257	\$2.87	1,257	\$2.87	998	\$2.28	604	\$1.38	
Utility Expense	\$4,120	\$9.41	\$4,720	\$10.78	\$1,340	\$3.06	\$3,640	\$8.31	Black and Veatch report, "Phase 1A Report, SoCal Gas Hydrogen Station Cost Study", August 29, 2022, Table 4-3
Customer Related O&M	\$5,377	\$12.28	\$5,977	\$13.65	\$2,338	\$5.34	\$4,244	\$9.69	
Effective H2 Station Revenue Requirement	\$6,756	\$15.42	\$7,356	\$16.79	\$3,792	\$8.66	\$4,827	\$11.02	
H2 Station Throughput (kg per year)	438,000		438,000		438,000		438,000		Station capacity is 1,200 kg per day
H2 Station Throughput (000's kg per year)	438		438		438		438		
H2 Pre-LCFS Fueling Station Rate	-	\$15.42	-	\$16.79	-	\$8.66	-	\$11.02	
LCFS Revenue Return	-	\$1.36	-	\$4.87	-	\$1.08	-	\$1.61	Black and Veatch report, "Phase 1A Report, SoCal Gas Hydrogen Station Cost Study", August 29, 2022, Table 1-1
H2 Fueling Station Rate	-	\$14.06	-	\$11.92	-	\$7.58	-	\$9.41	

2024 TCAP
Calculation of Capital Related costs

Calculation of H2 Station Capital related Costs	Electrolysis (100% Renewable)			Liquid Transport	Data Source	Notes
	Electrolysis	SMR				
NBV of H2 Stations	\$14,582	\$14,582	\$15,372	\$6,170	Recorded 2021	updated
Total NBV of Utility Gas Plant in Service	\$16,095,443	\$16,095,443	\$16,095,443	\$16,095,443	FERC Form 2 p.200, line 15	updated
NBV Ratio	0.09%	0.09%	0.10%	0.04%		
Total Utility Rate Base	\$9,371,894	\$9,371,894	\$9,371,894	\$9,371,894	Recorded 2021	updated
NBV Ratio	0.09%	0.09%	0.10%	0.04%		
H2 Station Ratebase	\$8,490	\$8,490	\$8,951	\$3,592		
Total Utility Income Taxes	\$227,084	\$227,084	\$227,084	\$227,084	FERC Form 2 p.263a, lines 2 + 9, e	updated
NBV Ratio	0.09%	0.09%	0.10%	0.04%		
H2 Station Income Taxes	\$206	\$206	\$217	\$87		
Total Utility AdValorem taxes	\$120,107	\$120,107	\$120,107	\$120,107	FERC Form 2 p.263a, line 16 e	updated
NBV Ratio	0.09%	0.09%	0.10%	0.04%		
Total H2 Station Income Taxes	\$109	\$109	\$115	\$46		

Calculation of Authorized ROR% and Total Return on Ratebase:

	Capital Ratio	Rate	ROR%	
Long-Term Debt	45.60%	4.23%	1.93%	FERC Form 2 p.122.22, Cost of Capi updated
Preferred Stock	2.40%	6.00%	0.14%	
Common Equity	52.00%	10.05%	5.23%	
Total ROR%	100%		7.30%	

Fuel	Carbon Intensity	EER Adjusted Carbon Intensity	GHG Reductions from Baseline Fuel
	g CO2e/MJ	g CO2e/MJ	%
Gasoline (Baseline)	99.44	99.44	-
On-Site SMR with RNG	(8.78)	(3.51)	104%
On-Site Electrolysis with Grid Electricity	164.46	65.78	34%
On-Site Electrolysis with Renewable Electricity	10.51	4.20	96%
Liquid H2 Transport	153.36	61.34	38%

Fuel	Carbon Intensity	EER Adjusted Carbon Intensity	GHG Reductions from Baseline Fuel
	g CO2e/MJ	g CO2e/MJ	% reduction
Diesel (Baseline)	100.45	100.45	-
On-Site SMR with RNG	(8.78)	(4.62)	105%
On-Site Electrolysis with Grid Electricity	164.46	86.56	14%
On-Site Electrolysis with Renewable Electricity	10.51	5.53	94%
Liquid H2 Transport	153.36	80.72	20%

Source: Current LCFS regulation, "2020_lcfs_fro_oal-approved_unofficial_06302020.pdf", Table 1 and 2 footnotes (gasoline and diesel); Black & Veatch Phase 1A Report, April 29, 2022, page 58 and 60

Hydrogen Vehicle Classification	EER
Light- to Medium-Duty (Gasoline)	2.5
Heavy-Duty (Diesel)	1.9

Source: Current LCFS regulation, "2020_lcfs_fro_oal-approved_unofficial_06302020.pdf", Table 5, page 73-74