

Emissions Summary

	Baseline Year	Target Year	Target Year
	2015	2025	2030
Historical Net Emissions (Metric Tons CO2e)	7,127,540		
Forecasted Net Sales Demand Emissions (Metric Tons CO2e)		7,920,635	7,721,324
Emissions Reduction Required (% of baseline)		4%	22%
Emission Target (Metric Tons CO2e)		6,842,439	5,559,481
Emission Reduction Required (Metric Tons CO2e)		1,078,197	2,161,842

Clean Heat Resources Emission Reductions

Demand Side Customer Emission Reductions (Metric Tons CO2e)

	290,596	1,676,297
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Recovered Methane Emissions Reductions (Metric Tons CO2e)

Total Recovered Methane Emissions Reductions(Metric Tons CO2e)	252,988	366,796
Allowable Recovered Methane Emissions Reductions (%)	1%	5%
Allowable Recovered Methane Emissions Reductions (Metric Tons CO2e)	269,549	491,328
Recovered Methane Emissions Reductions Below Allowable Limit?	Yes	Yes

Other Supply Side Resources Emissions Reductions (Metric Tons CO2e)

	0	118,749
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Total Emission Reductions Achieved (Metric Tons CO2e)

	543,584	2,161,842
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Creditable Emissions Reductions Achieved (Metric Tons CO2e)

	543,584	2,161,842
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Emissions Reduction Target Demonstration

	2025	2030
Clean Heat Plan Projected Emissions (Net Forecast Emissions - Creditable Reductions)	7,377,051	5,559,482
Clean Heat Plan Emissions Target	6,842,439	5,559,481
Difference	534,613	0
Does CHP Portfolio Meet Target?	No	Yes

Historical and Forecasted Usage (Dth)		2015	2022	2023	2024	2025	2026	2027	2028	2029	2030
End Use CO2 Emissions	Sales Customer Residential	91,508,079	105,152,926	98,542,017	99,318,133	99,796,636	99,954,959	99,469,182	98,905,932	97,676,342	97,111,531
	Sales Customer Small Commercial	32,235,828	36,898,028	35,845,033	36,855,020	37,167,136	37,018,857	36,911,592	36,884,808	36,544,104	36,363,717
	Sales Customer Large Commercial	5,290,135	9,141,044	9,133,692	9,375,097	9,457,969	9,423,579	9,395,844	9,405,426	9,332,906	9,292,786
	Sales Customer Interdepartmental	49,742	7,969	27,855	27,855	27,855	27,855	27,855	27,855	27,855	27,855
	Sales Customer Interruptible	1,332,767									
	Total Sales Customer Usage	130,416,551	151,199,967	143,548,598	145,576,105	146,449,595	146,425,250	145,804,473	145,224,022	143,581,207	142,795,889
	Aggregate Sales Customers > 460,000 Mscf/yr (customer must report to EPA)	0	595,863	601,881	607,961	614,102	620,243	626,445	632,710	639,037	645,427
	Transport Customer Firm Transport (interruptible included in this line for 2022-2030)	92,210,458	140,607,950	144,607,432	141,208,974	132,416,411	143,412,988	136,223,791	140,169,739	139,706,891	140,002,298
	Transport Customer Interruptible Transport	17,530,727									
	Transport Customer Type 3										
	Total Transport Customer Usage	109,741,185	140,607,950	144,607,432	141,208,974	132,416,411	143,412,988	136,223,791	140,169,739	139,706,891	140,002,298
	System Asset Ownership Changes (+ for gains, - for losses)	0									
	System Asset Ownership Changes (+ for gains, - for losses)	0									
	System Asset Ownership Changes (+ for gains, - for losses)	0									
	Total Asset Ownership Change Usage	0	0	0	0	0	0	0	0	0	0
Historical Sales, Demand/Sales Forecasts											
Total Usage	240,157,736	292,403,779	288,757,911	287,393,040	279,480,108	290,458,480	282,654,709	286,026,471	283,927,135	283,443,614	
Usage Net of Transport Customers & Sales Customers > 460,000 Mscf/yr	130,416,551	151,199,967	143,548,598	145,576,105	146,449,595	146,425,250	145,804,473	145,224,022	143,581,207	142,795,889	
Carbon Dioxide Emissions Resulting from Combustion of Gas by Residential, Commercial, and Industrial Customers (SB 21-264 (3)(c)(I)(B))											
CO2	6,921,255	8,024,238	7,618,177	7,725,778	7,772,134	7,770,842	7,737,897	7,707,093	7,619,908	7,578,231	
Net End Use Emissions	6,921,255	8,024,238	7,618,177	7,725,778	7,772,134	7,770,842	7,737,897	7,707,093	7,619,908	7,578,231	
<i>Source: EPA Subpart NN Calculation after Statutorily excluded customer types removed</i>											
LDC CH4 Emissions	Methane Leaked from the transportation and delivery of gas to customers, and leakages from delivery to other distribution companies (SB 21-264 (3)(c)(I)(A and C))										
	CH4	206,286			149,571	148,501	147,431	146,359	145,235	144,163	143,093
	Total Estimated Leakage	206,286			149,571	148,501	147,431	146,359	145,235	144,163	143,093
	<i>Source: EPA Subpart W Calculations (our calculation of subpart W emissions factor)</i>										
Total Covered Emissions (Metric Tons CO2e)											
Total Emissions for CHP	7,127,540	8,024,238	7,618,177	7,875,349	7,920,635	7,918,273	7,884,256	7,852,327	7,764,071	7,721,324	

Demand Side Clean Heat Resources	Status	2025 Emissions Reductions		2030 Emissions Reductions	
		2025 Savings (Dth)	(tCO2e)	2030 Savings (Dth)	(tCO2e)
Additional Gas DSM	New	1,269,597	67,378	3,210,793	170,398
Electrification	New	4,206,076	223,218	28,375,513	1,505,899
Total Demand Side Reductions		5,475,673	290,596	31,586,307	1,676,297

Potential supporting documentation sources

Supply Side Recovered Methane Resources	Status	2025 Replacement (Dth)	2025 Methane Credits (tCO2e)	2030 Replacement (Dth)	2030 Methane Credits (tCO2e)
		Livestock	New	2,288,481	224,753
Landfill Gas	New	370,000	28,235	999,000	69,761
Coal Mine Methane	New	0	0	140,671	72,281
MSW	New	0	0	0	0
Recovered Methane Totals		2,658,481	252,988	3,428,152	366,796

Supporting documentation source

Recovered Methane Protocol Calculated Annual Credits

Supply Side Clean Heat Resources	Status	2025 Emissions Reductions		2030 Emissions Reductions	
		2025 Replacement (Dth)	(tCO2e)	2030 Replacement (Dth)	(tCO2e)
Hydrogen	New	0	0	3,664,305	118,749
Supply Side Reductions		0	0	3,664,305	118,749

Supporting documentation sources

Calculation of net emissions savings from hydrogen project

Grand Totals		8,134,154	543,584	38,678,764	2,161,842
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Year	Net Customer Sales Gas Forecasted (Dth)	Customer End Use CO2 Emissions (metric tons)	Gas Leakage (scf)	Gas Leakage CH4 Emissions (metric tons CO2e)	Total Emissions (metric tons CO2e)	Clean Heat Resource Emissions Reductions (metric tons CO2e)	Estimated Net Emissions (Metric Tons CO2e)	Percent Reduction from Baseline
2035	99,079,598	5,258,191	0	143,093	5,401,284	2,161,842	3,239,442	55%
2040	94,109,492	4,994,426	0	143,093	5,137,518	2,161,842	2,975,676	58%
2045	89,438,923	4,746,557	0	143,093	4,889,650	2,161,842	2,727,808	62%
2050	88,762,608	4,710,664	0	143,093	4,853,757	2,161,842	2,691,915	62%

Emission Factors

CO2	117 lbs/MMBtu gas combusted	Factor for 100% CO2 conversion in Subpart NN
CO2	0.05307 Metric Ton/Dth	

Conversion Constants

2000 lbs/Short Ton
 2204.62 lbs/Metric Ton

Lookup Tables

Status Look-up	Description
Approved	Approved in a prior PUC decision
Pending	Subject to current PUC proceeding
New	Proposed new resource in Clean Heat Plan
Required	Required by federal, state, or local statute or regulation