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2023 Preliminary Natural Gas Cost Projections

Delivered Costs

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Date: April 18, 2023

Introduction/Purpose

- Began updating end-use natural gas cost rate projections for 2023 IEPR
- Cost projections fulfill statutory requirements and meet the “electricity and natural gas forecast” scoping order for the 2023 IEPR
- End-use cost rates are used internally and externally
- Workshop will provide an overview of the end-use cost framework
  - Seek feedback on assumptions and results

Terminology

Delivered Cost *by end-use* = Commodity Cost + Transportation Rate

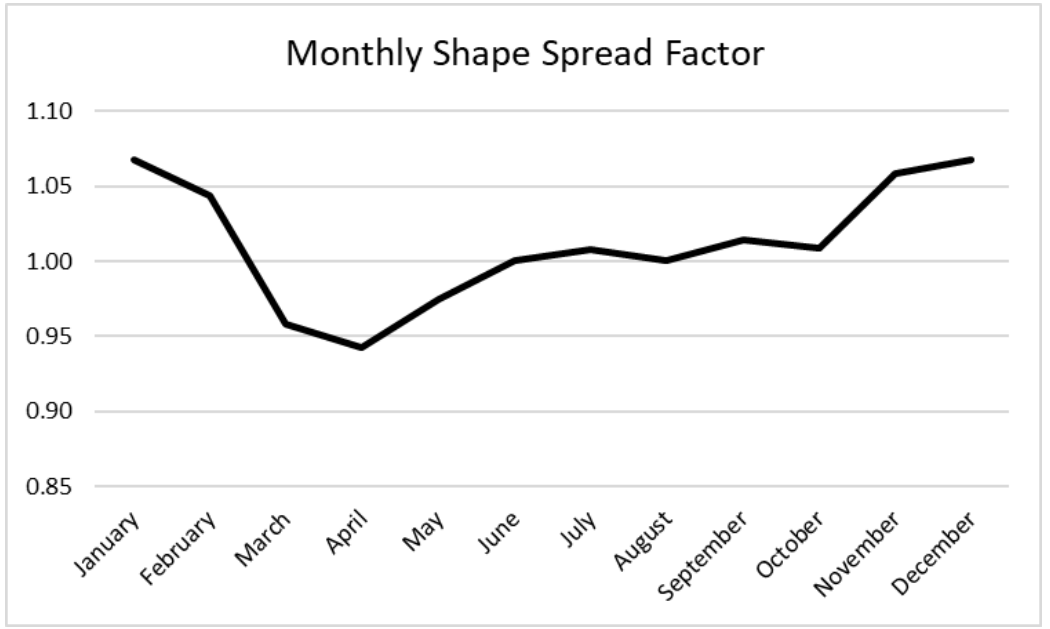
- Delivered cost by end-use
  - Commodity cost
  - Transportation rates by class
    - Interstate pipelines
    - California utility
      - Electric generation
      - Residential
      - Commercial
      - Industrial

Overview of Delivered Cost

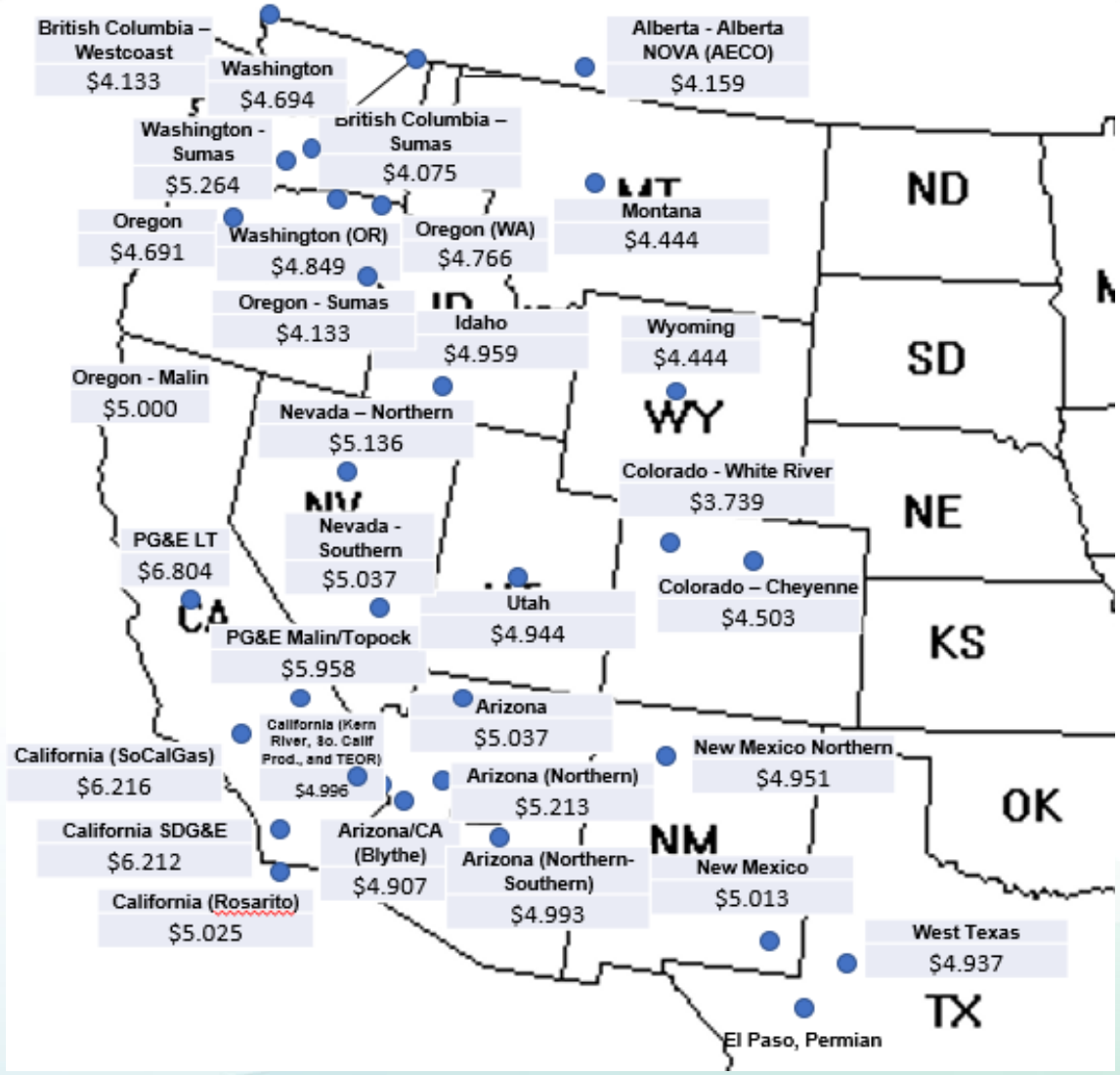
Electric Generator Cost	End-Use Cost (Residential, Commercial, and Industrial)
Commodity Cost - NAMGas Model	Commodity Cost - NAMGas Model
Transportation Cost - Pipeline Tariff Rates and/or CA Transportation Rates Model	Transportation Cost - CA Transportation Rates Model

Updates

- Electric generator calculation changed to handle NAMGas output
  - Interpolation addend monthly shape variable
- Transportation rates
  - Electric generation, residential, commercial, and industrial
- Update end-user cost base (chain) year as need



31 Electric Generation Price Points



Electric Generation Cost by Location

Annual Average Burner Tip Price $/Mmbtu

Year	Alberta	Arizona (Northern)	Arizona (Northern-Southern)	British Columbia	California (Rosarito)	California (PG&E BB)	California (PG&E LT)	California (SoCalGas)	California (SDG&E)	California (Kern River, So. Calif Prod., and TEOR)	Colorado	Montana	New Mexico	Nevada (Southern)	Oregon (Washington)	Oregon (Malin)	Washington	West Texas
2030	$4.08	$5.18	$5.02	$4.06	$5.04	$6.17	$7.18	$6.53	$6.35	$4.89	$3.64	$4.35	$5.09	$4.91	$4.68	$4.92	$5.19	$5.02
2035	$4.06	$5.16	$5.02	$4.04	$5.03	$6.40	$7.58	$6.76	$6.54	$4.87	$3.61	$4.33	$5.11	$4.84	$4.67	$4.89	$5.17	$5.03
2040	$4.06	$5.15	$5.10	$4.04	$5.00	$6.70	$8.07	$7.01	$6.74	$4.84	$3.61	$4.33	$5.25	$4.82	$4.67	$4.88	$5.17	$5.17
2045	$4.06	$5.14	$5.13	$4.04	$4.98	$7.05	$8.66	$7.33	$7.01	$4.81	$3.61	$4.34	$5.29	$4.81	$4.67	$4.86	$5.17	$5.22
2050	$4.07	$5.14	$5.16	$4.04	$4.96	$7.49	$9.40	$7.74	$7.35	$4.79	$3.61	$4.38	$5.35	$4.80	$4.67	$4.84	$5.17	$5.27

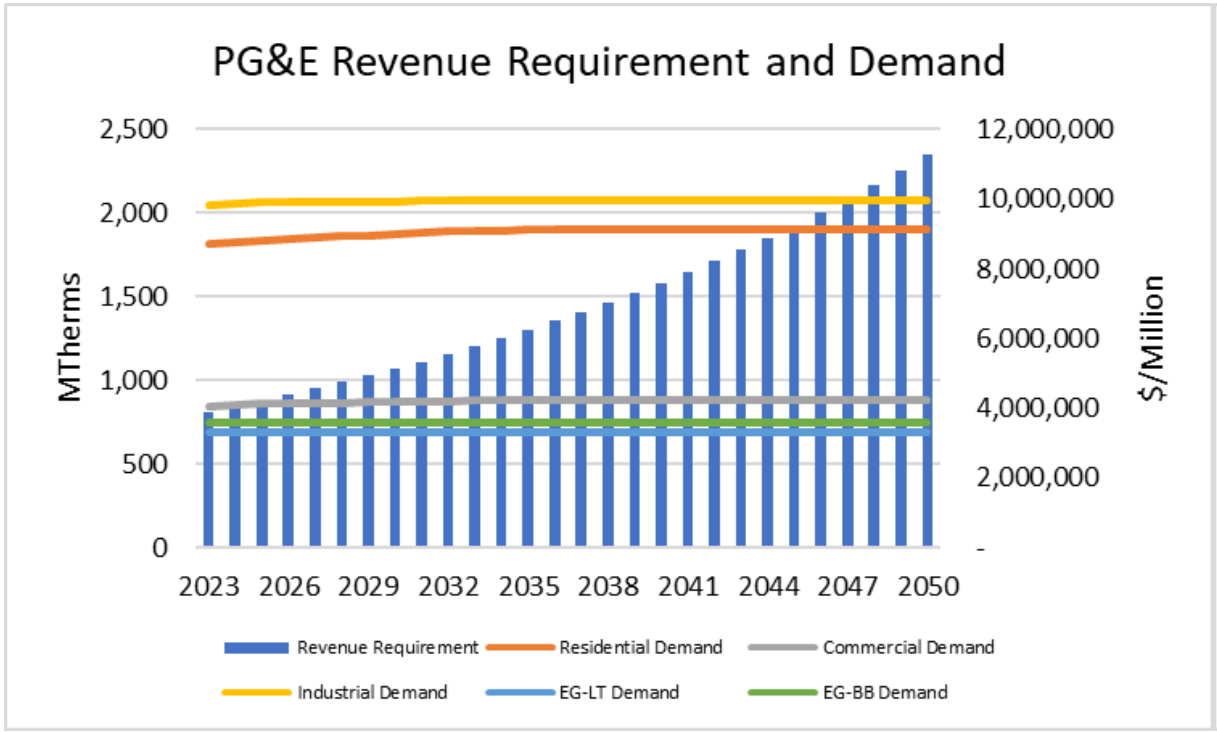
Interstate Pipeline Transportation Rates

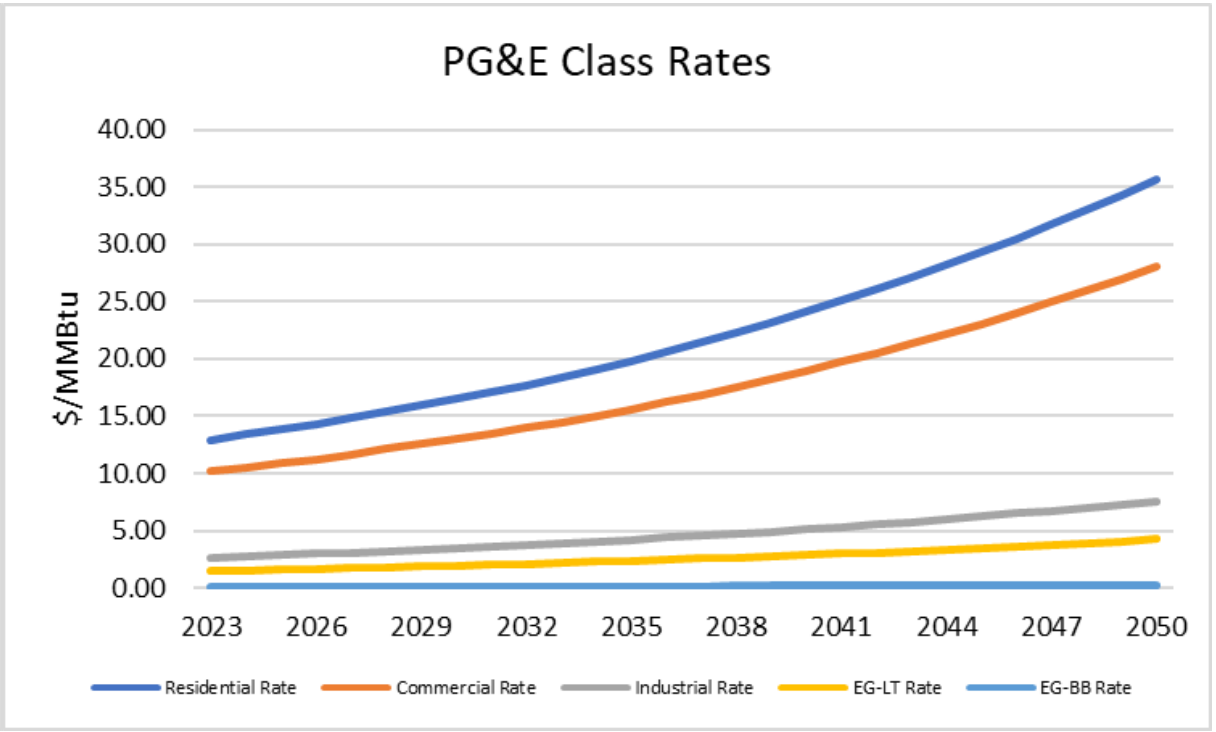
- Interstate rate difference from 2021 to 2023 as of February

Interstate Pipeline/Location	Rate Per MMBtu	Rate Change Per MMBtu
TransCanada-GTN – Oregon/Washington	$ 0.2398	-$0.0083
Colorado Intestate Gas (Colorado and Montana)	$ 0.2538	-$0.0592
TransCanada-NGTL – Alberta	$ 0.2100	-$0.0083
EPNG – AZ (Northern and Southern)	$ 0.3491	$0.0082
EPNG – New Mexico (Northern)	$ 0.2584	$0.0062
EPNG – West Texas	$ 0.2153	$0.0051
EPNG – New Mexico Southern and West Texas	$ 0.2589	$0.0062
Enbridge Spectra Westcoast – British Columbia	$ 0.2684	$0.0184
Westcoast Sumas – British Columbia	$ 0.2099	$0.0119
North Baja – California (Rosarito)	$ 0.1180	-$0.0004

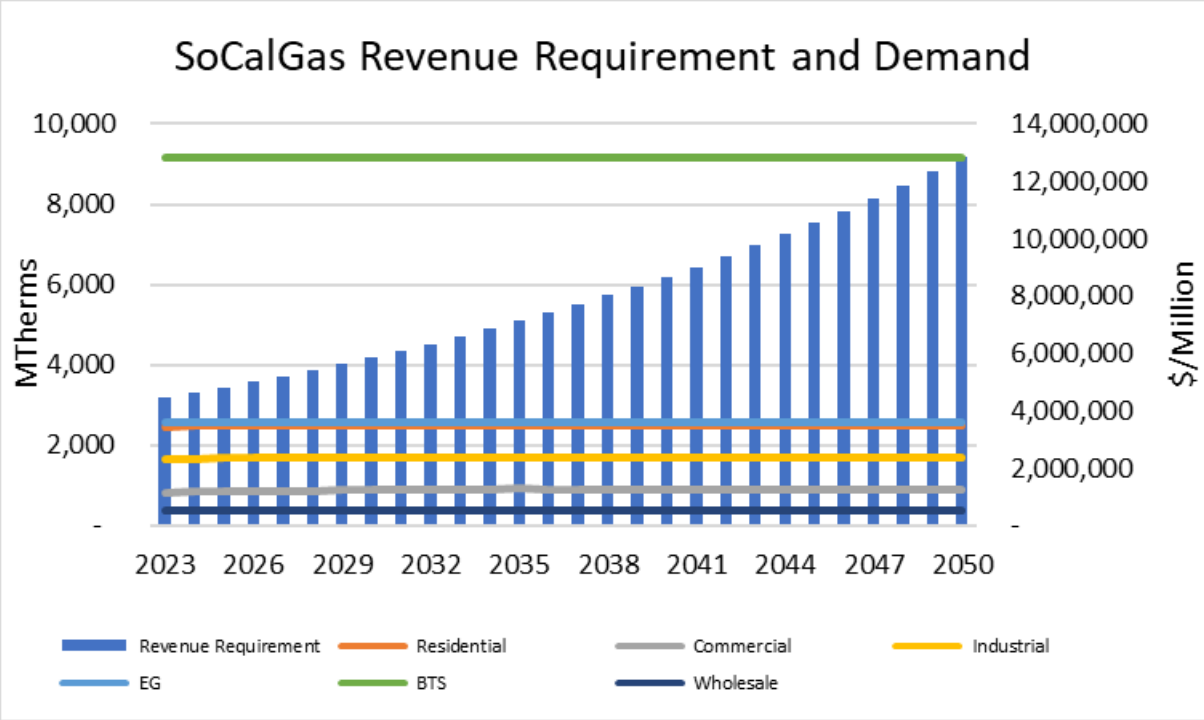
PG&E Transportation Rate Results

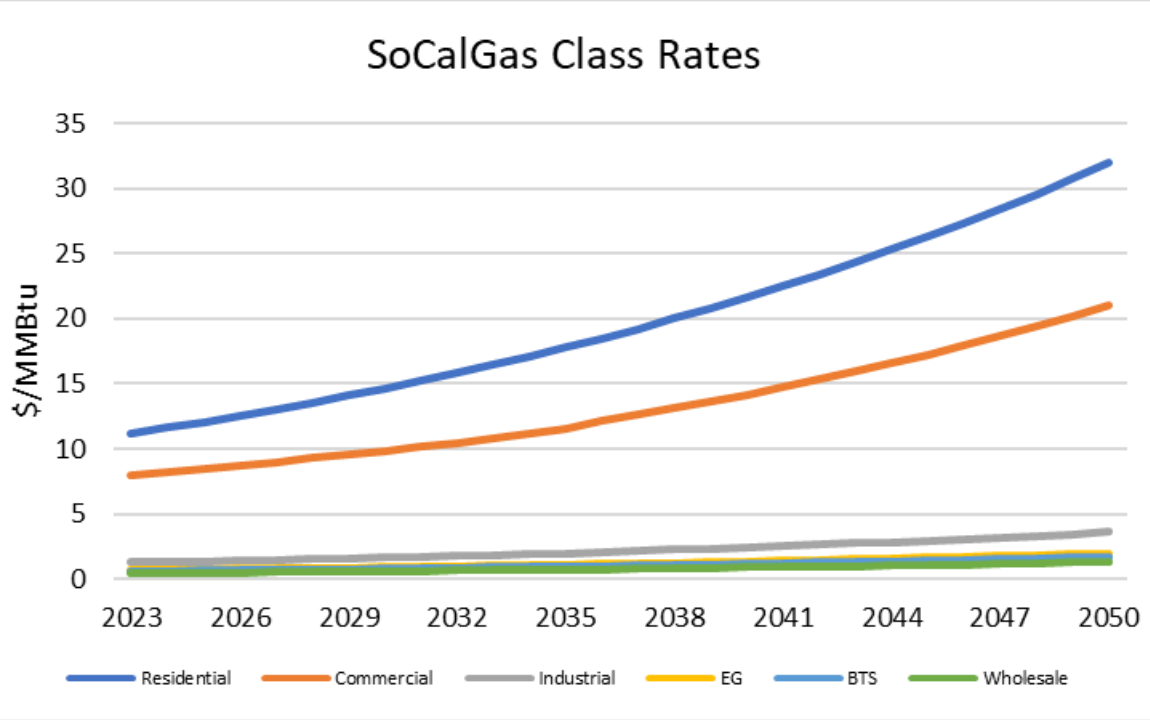
- Assumes an annual 4% revenue requirement growth rate for all utilities



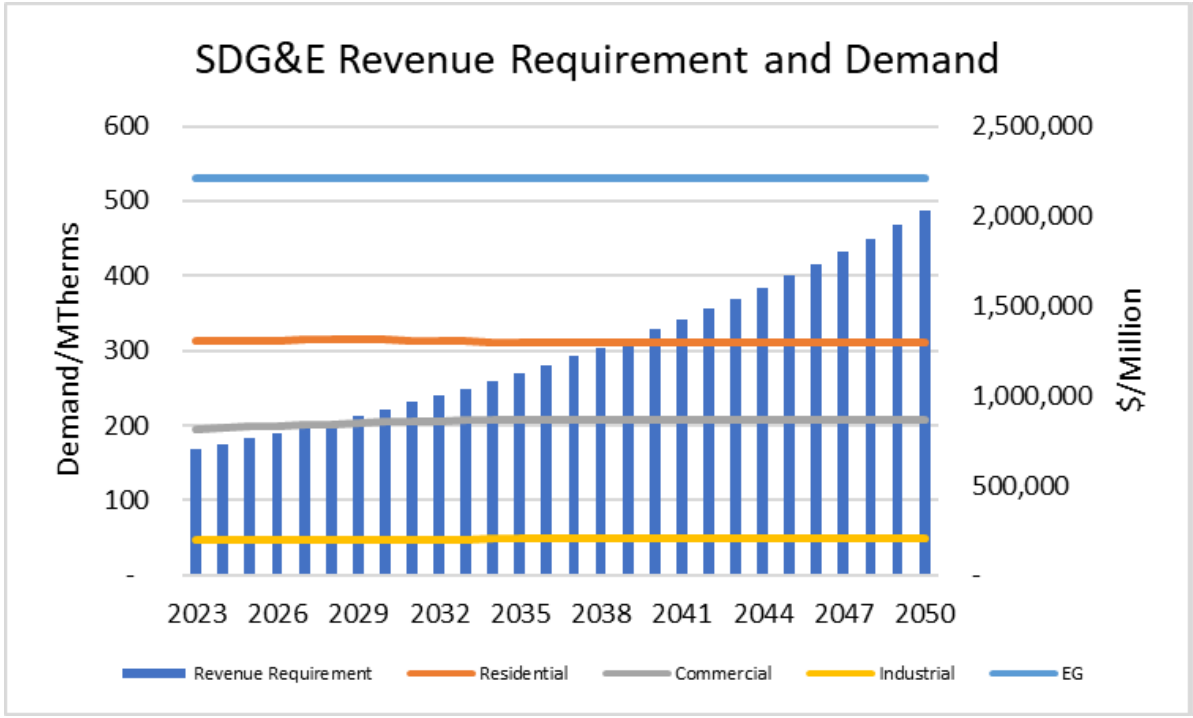


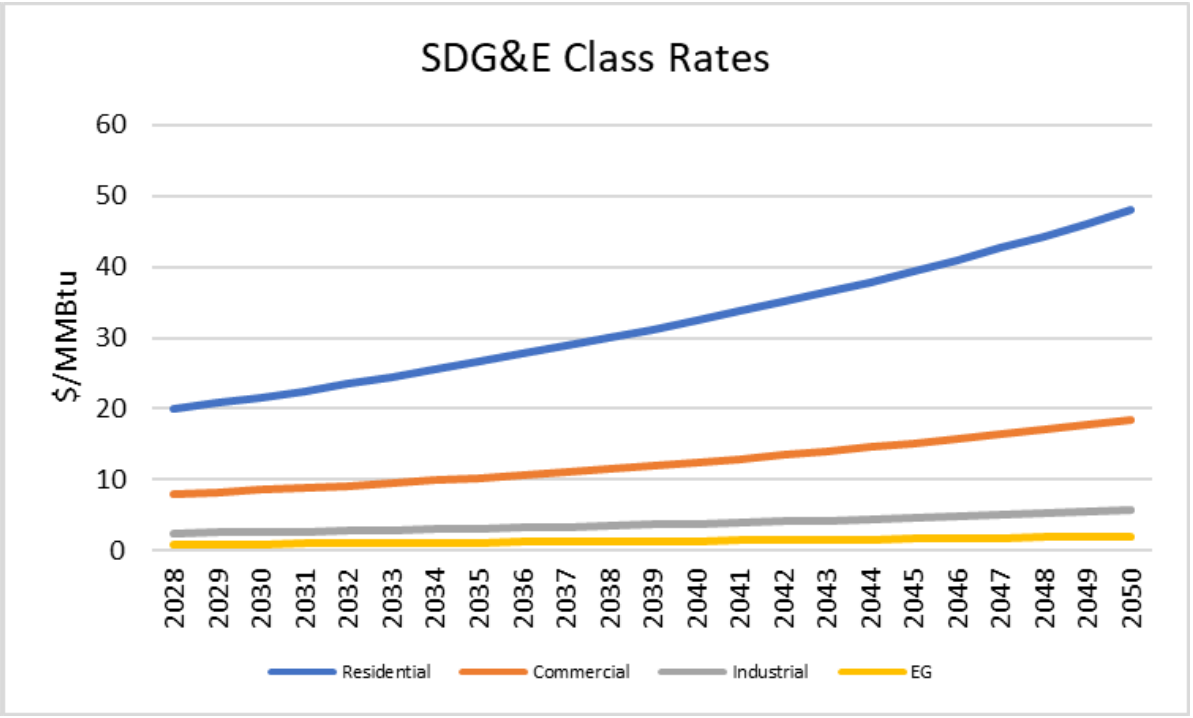
SoCalGas Transportation Rate Results





SDG&E Transportation Rate Results





California Transportation Rate Change by Utility

2023-2030 PG&E Average Annual End-Use Rate Change

Model Year	Residential	Commercial	Industrial	EG-LT	EG-BB
2021	$16.52	$9.91	$5.44	$0.81	$0.81
2023	$14.64	$11.52	$3.05	$1.69	$1.02
Difference	($1.88)	$1.61	($2.39)	$0.88	$0.22

2023-2030 SoCalGas Average Annual End-Use Rate Change

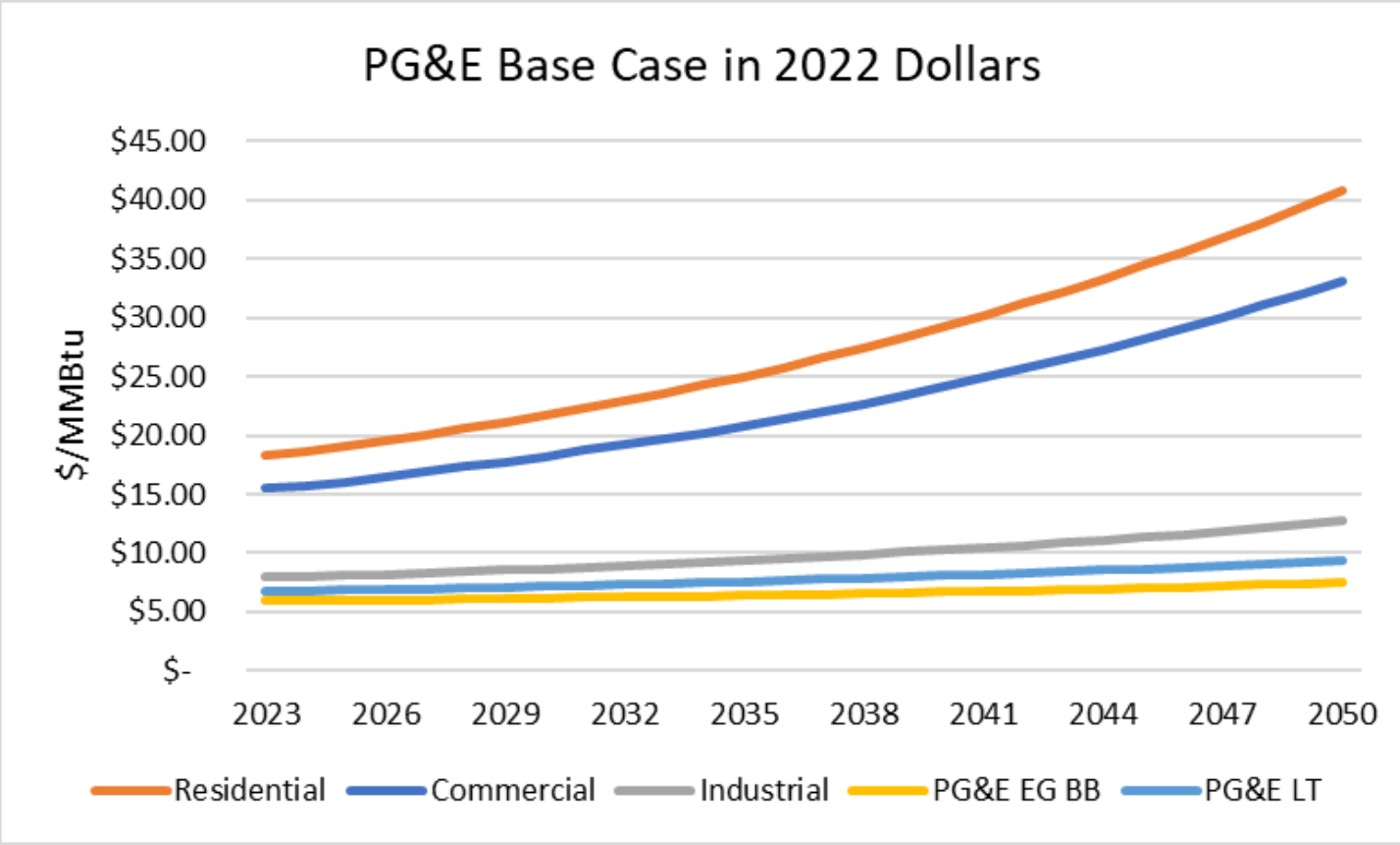
Model Year	Residential	Commercial	Industrial	EG	BTS	Wholesale
2021	$12.70	$6.19	$1.30	$0.66	$0.51	$0.44
2023	$12.84	$8.88	$1.46	$0.80	$0.70	$0.53
Difference	$0.14	$2.68	$0.16	$0.14	$0.19	$0.10

SDG&E Average Annual End-Use Rate Change

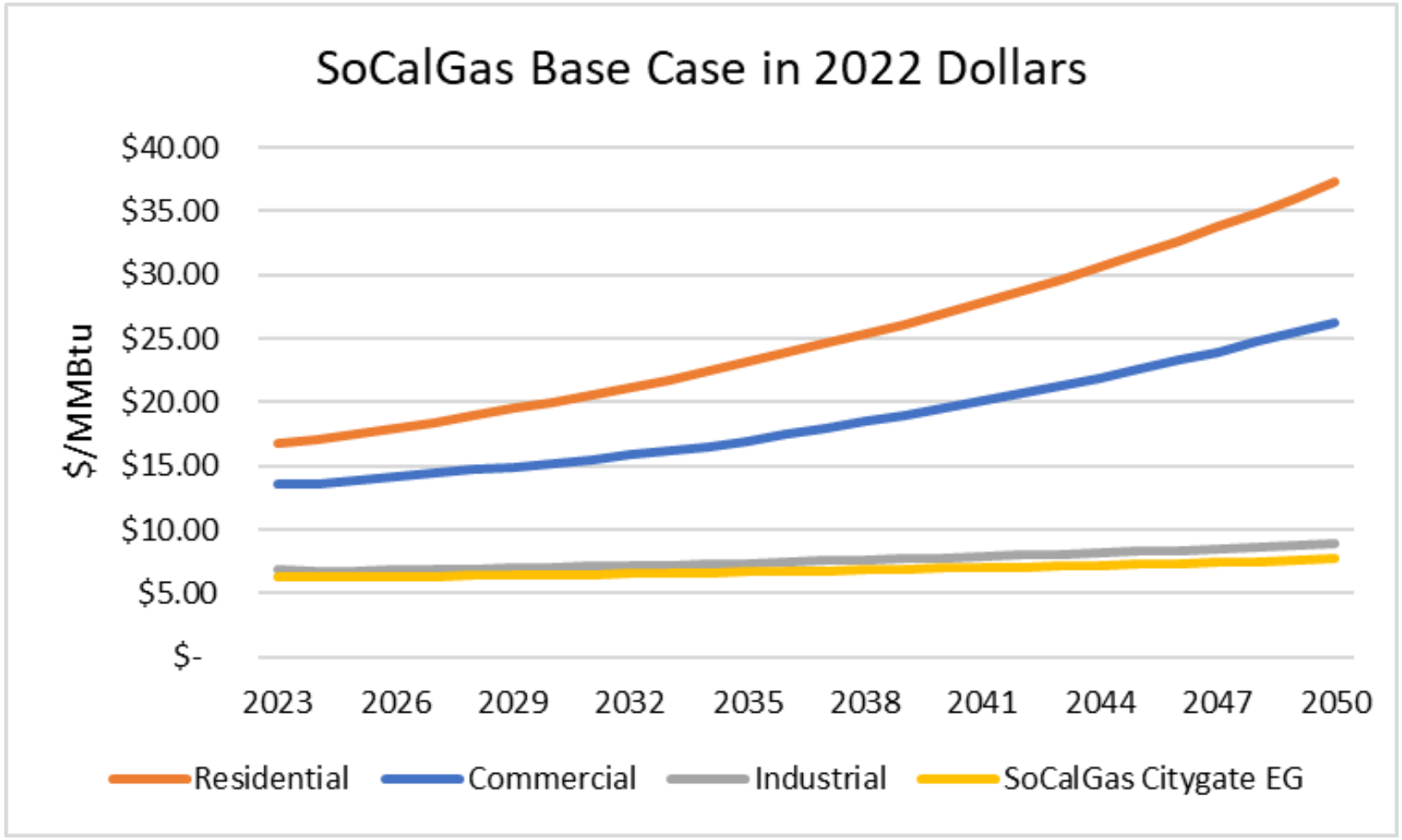
Model Year	Residential	Commercial	Industrial	EG
2021	$19.87	$7.64	$2.51	$0.60
2023	$18.95	$7.61	$2.28	$0.79
Difference	($0.92)	($0.03)	($0.23)	$0.20

PG&E Delivered Cost by End-Use

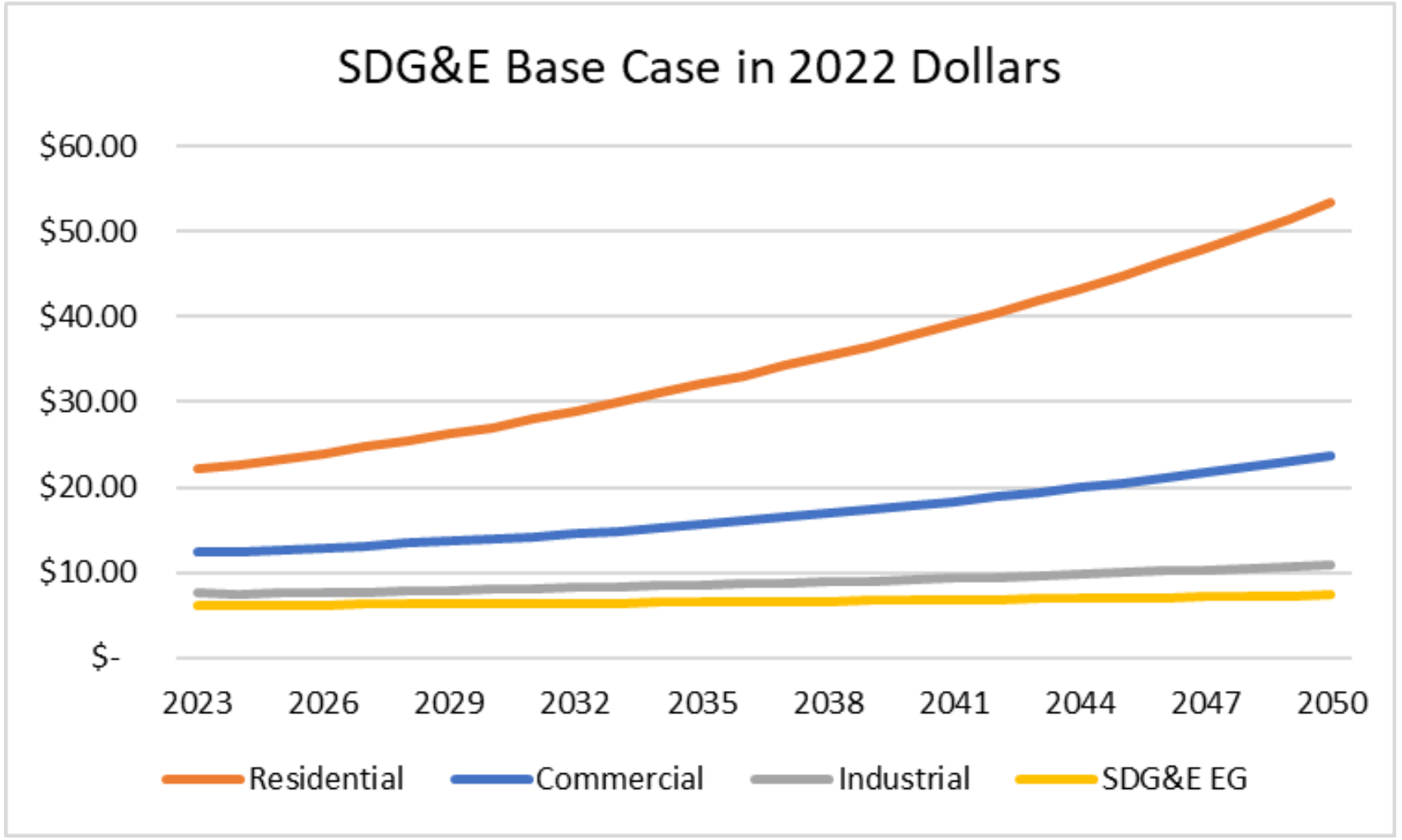
- Preliminary electric generator residential, commercial, and industrial rates in 2022 dollars from 2023 to 2050



SoCalGas Delivered Cost by End-Use



SDG&E Delivered Cost by End-Use



Observations

End-use costs are primarily higher than the last IEPR cycle mostly due to the NAMGas commodity projections

- Electric generation cost projections increased in 2023 compared to 2021
- Interstate transportation rates are relatively unchanged
- 2023 transportation rates for PG&E, SoCalGas, and SDG&E differed from 2021 due to changes in the revenue requirement, class spread, and demand

Next Steps

- Continue to vet rates and adjust methodology and assumptions based on feedback
- Incorporate next iteration of NAMGas cost projections
- Look into accounting for cap-and-trade projections for those that do not have an established methodology

Thank You!

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