

DOCKETED

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Gas End-Use Rates

Understanding Long-Term Trends in Gas End-Use Rates

Presenter: Anthony Dixon, Natural Gas Unit, Energy Assessments Division

Date: June 6, 2025



Presentation Schedule

- **Purpose**
- Who uses end-use rates?
- Scenario Development
- Gas commodity prices
- Transportation Rates Modeling
 - Revenue requirements
 - Demand scenarios
 - Electric generator end-use rates
 - California utilities' transportation rates
- End-Use Rates Results
- Considerations
- Next steps



Purpose

- Vet **PRELIMINARY** gas end-use rates
- Vet **PRELIMINARY** commodity price model
- Receive feedback
- Discuss next steps



End-Use Rates

- Purpose
- **End-Use Rates**
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End-Use Rates

Commodity Price

- Wholesale, pass through cost
- North America-wide market
 - Even worldwide with the growth in LNG exports
- CEC models using Machine Learning model, Prophet
- Approximately 25% of end-use rates*



Transportation Rate*

- Cost to deliver gas from pricing hub to end users
- Approximately 75% of end-use rates*



End-Use Rates

Final price customer pays for gas:

- Electric Generators
- Residential
- Commercial
- Industrial

*Percents of totals based on historical data

*Transportation rates are modeled using two models, EGEUR and CUTR





CEC Approach

Transportation Rates

CEC- Consistent with utility approach

Revenue Requirement (RR) x Class Allocations / Demand

- **Demand and RR - biggest drivers of transportation rates, RR/Demand; as RR increases and demand decreases, the rate increases.**
 - RR modeled using base year amount and growth rates
 - Class Allocations - portion of the total RR that each 'class' pays
 - Comes from utilities' advice letters
 - Demand is the CEC adopted forecasts and CARB Scoping plan



End-Use Rates Users: State Energy Entities

- Energy Assessments Division
- Efficiency Division
- CPUC
- California ISO



End-Use Rates Users: External

- Gas Utilities
- Western Electricity Coordinating Council
- Northwest Public Power Association
- Environmental Groups
- Universities and Consultants



Scenario Development

- Purpose
- What are end-use rates and who uses them?
- **Scenario Development**
- Gas commodity prices modeling
- Transportation Rates Modeling
 - Revenue requirements
 - Demand scenarios
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Scenario Development Continued

18 total scenarios developed

- 6 Demand Cases
 - 4 *2023 CED* Adopted Gas Forecast
 - 2 2022 CARB Scoping Plan
- 3 revenue requirements
 - Constant Growth RR
 - Front Load RR
 - Pruning RR
- For example, one case is the base demand forecast from the *2023 CED* and the Constant Growth RR
- The next is base demand with front load RR, etc.

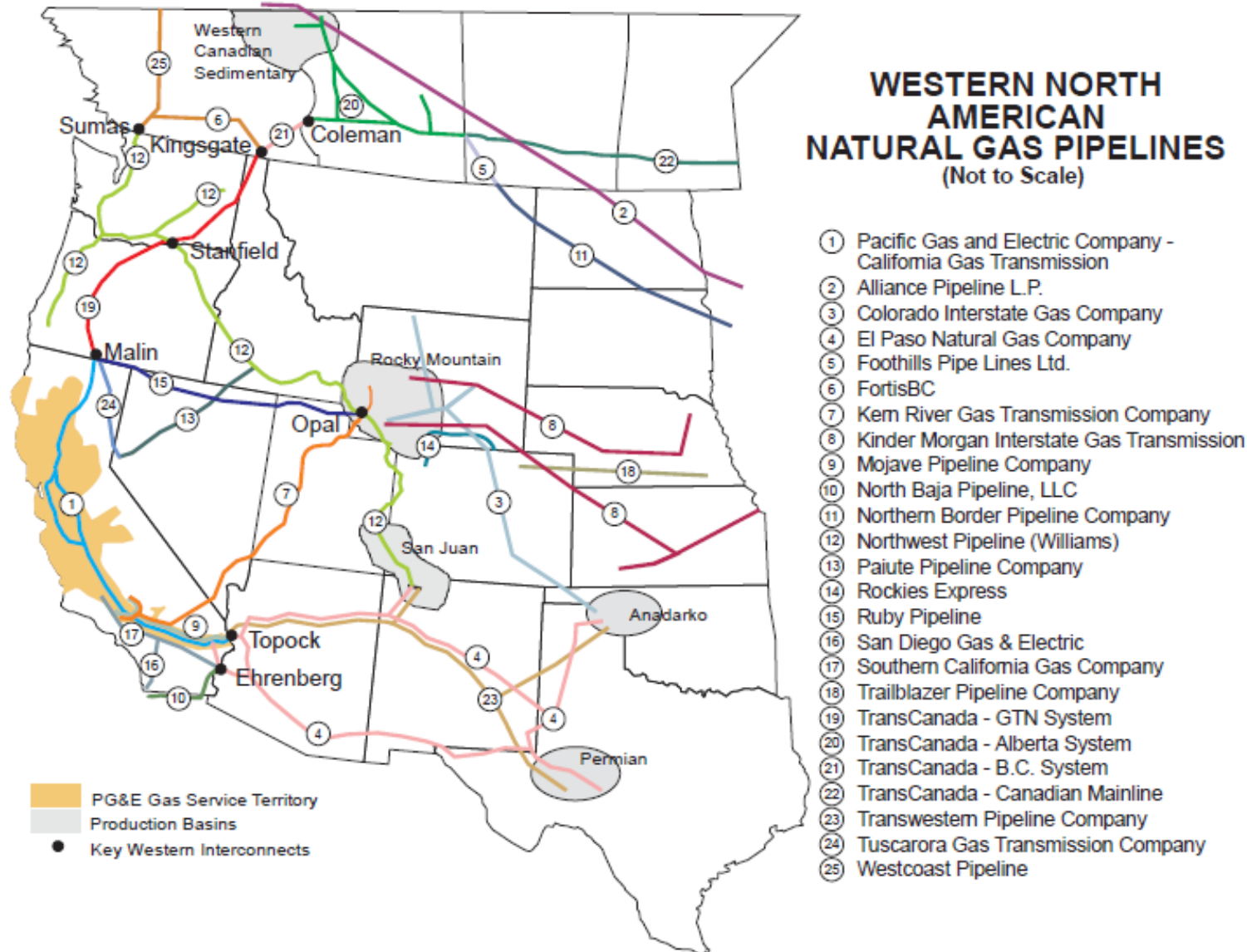


Gas Commodity Prices Modeling

- Purpose
- What are end-use rates and who uses them?
- Scenario Development
- **Gas commodity prices modeling (GCP)**
- Transportation Rates modeling
 - Revenue requirements
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GCP: Pricing Hubs and Infrastructure





GCP: Data Used

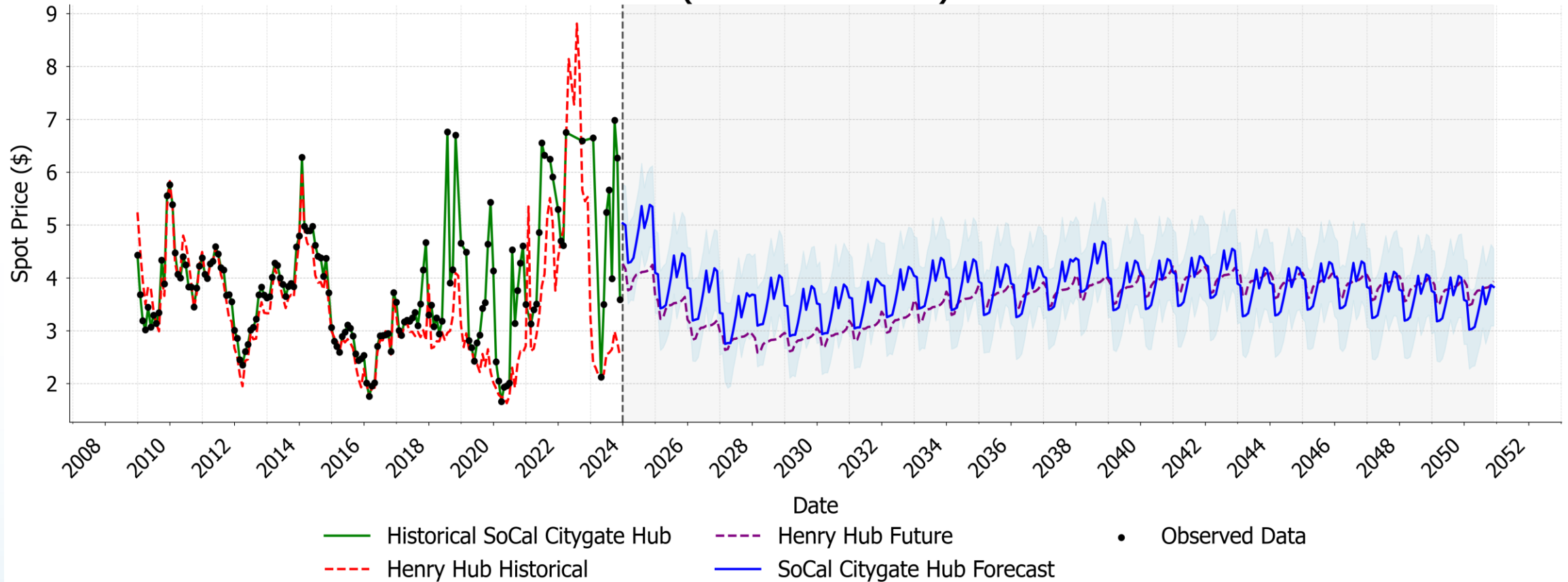
In-House GCP Modeling Data Sources

Time Series Data	Description
Henry Hub spot price (Historical and forecast) (NGI/EIA)	○ Benchmark for national gas price ○ Historical monthly data on prices and volumes ○ Yearly future price data
Nationwide electricity retail price (Historical and forecast) (EIA)	○ Historical state-level monthly data ○ National yearly future price data
Electricity generation from NG (Historical) (EIA)	○ Historical state-level yearly data
Renewable energy consumption (Historical and forecast) (EIA)	○ Historical national monthly data ○ National yearly future price data
Heating and cooling degree days (Historical and forecast) (NOAA)	○ Historical and forecasted state-level yearly data



GCP: Select Modeling Results for SoCal Citygate

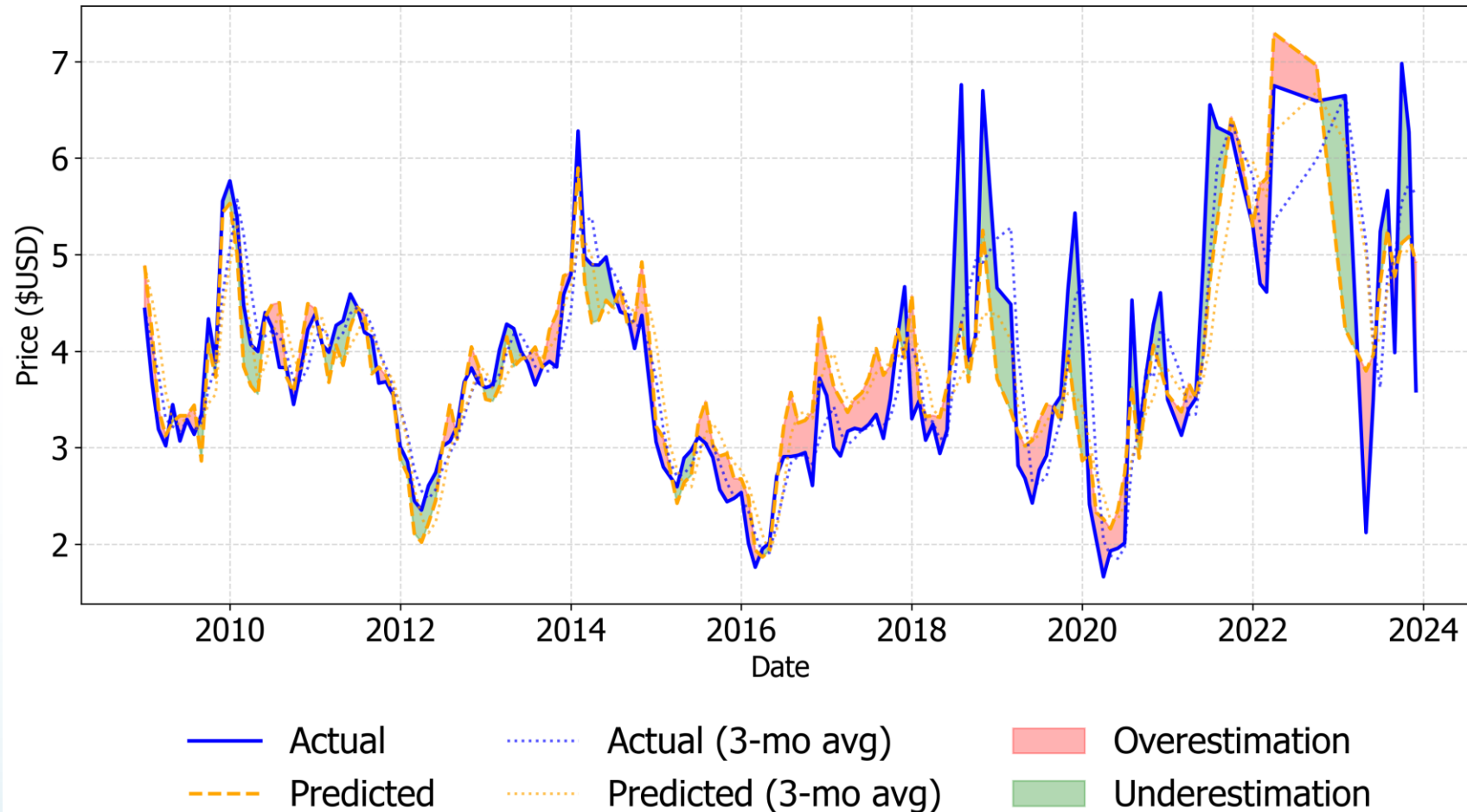
SoCal Citygate Hub Backcast and Forecast
(From 2024 Onwards)





GCP: Verifying Model's Accuracy

SoCal Citygate: Actual vs Predicted Price
RMSE = 0.78





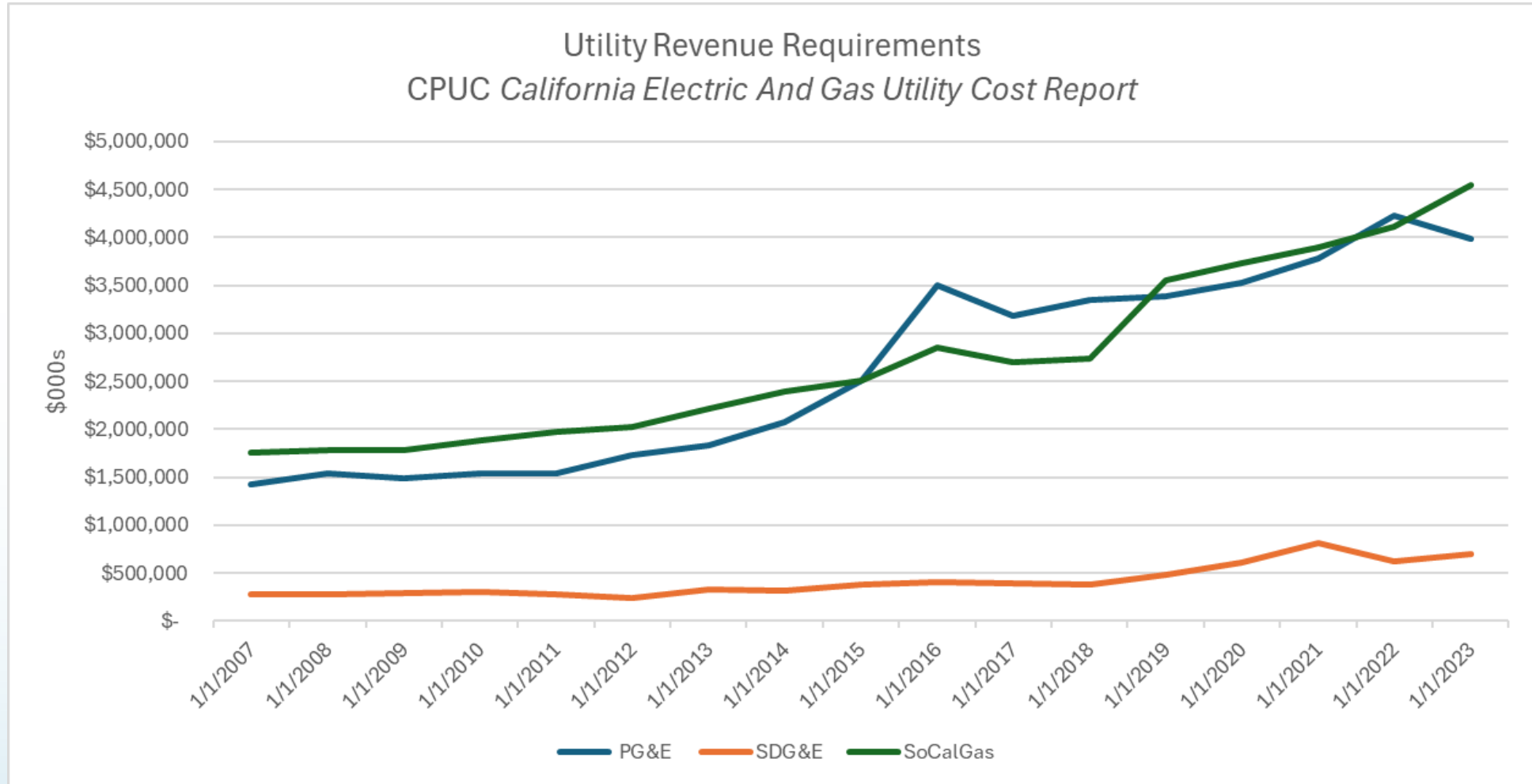
Revenue Requirements

- Purpose
- What are end-use rates and who uses them?
- Scenario Development
- Gas commodity prices modeling
- **Transportation Rates Modeling**
 - **Revenue requirements (RR)**
 - Demand scenarios
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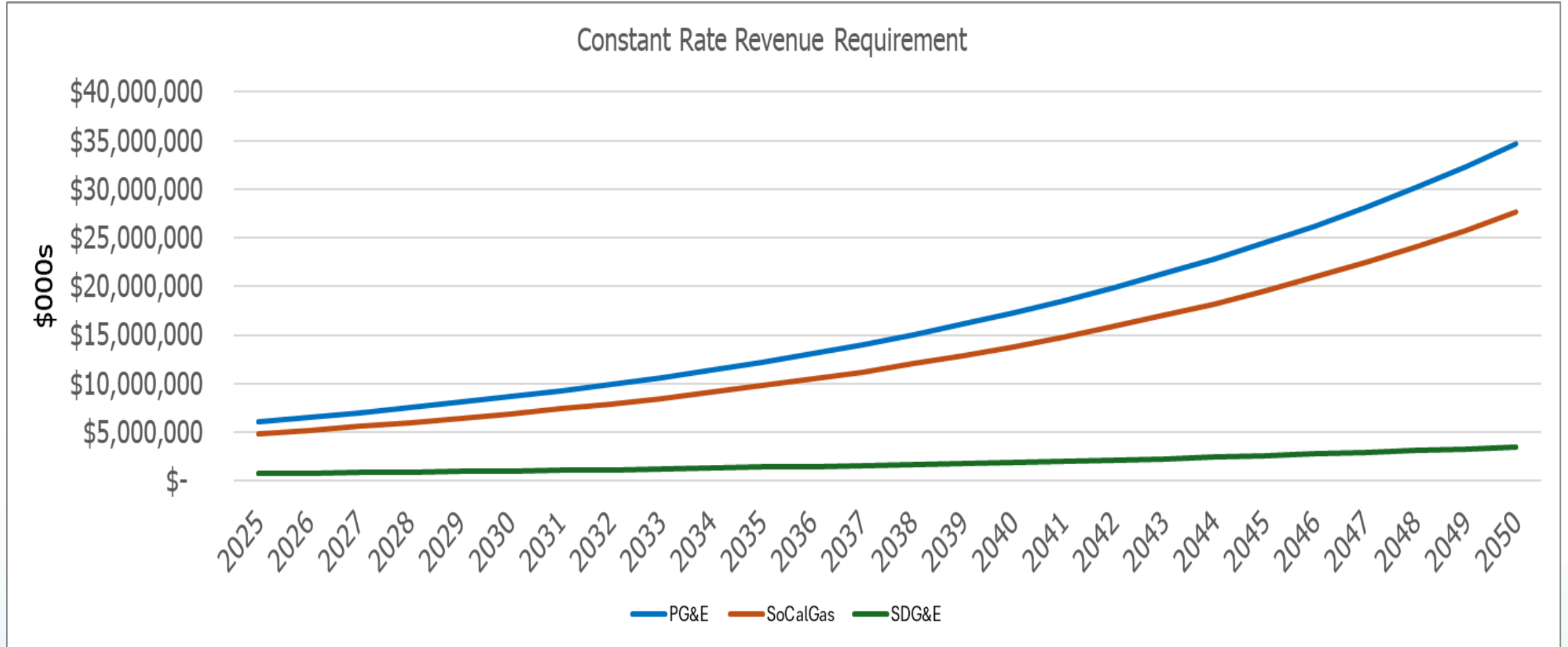
Historical Revenue Requirements

Revenue requirement for the three major CA gas utilities (2007-2023):



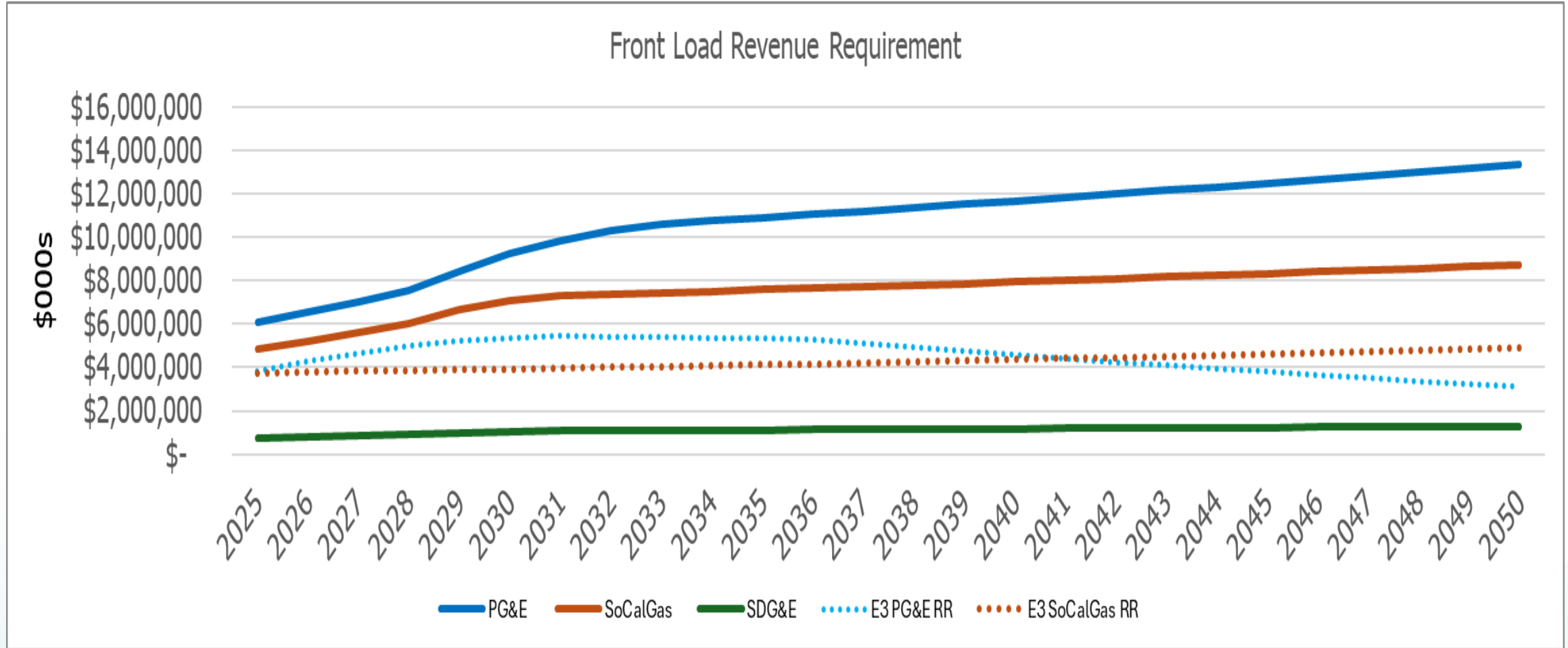


Revenue Requirements: Constant Growth



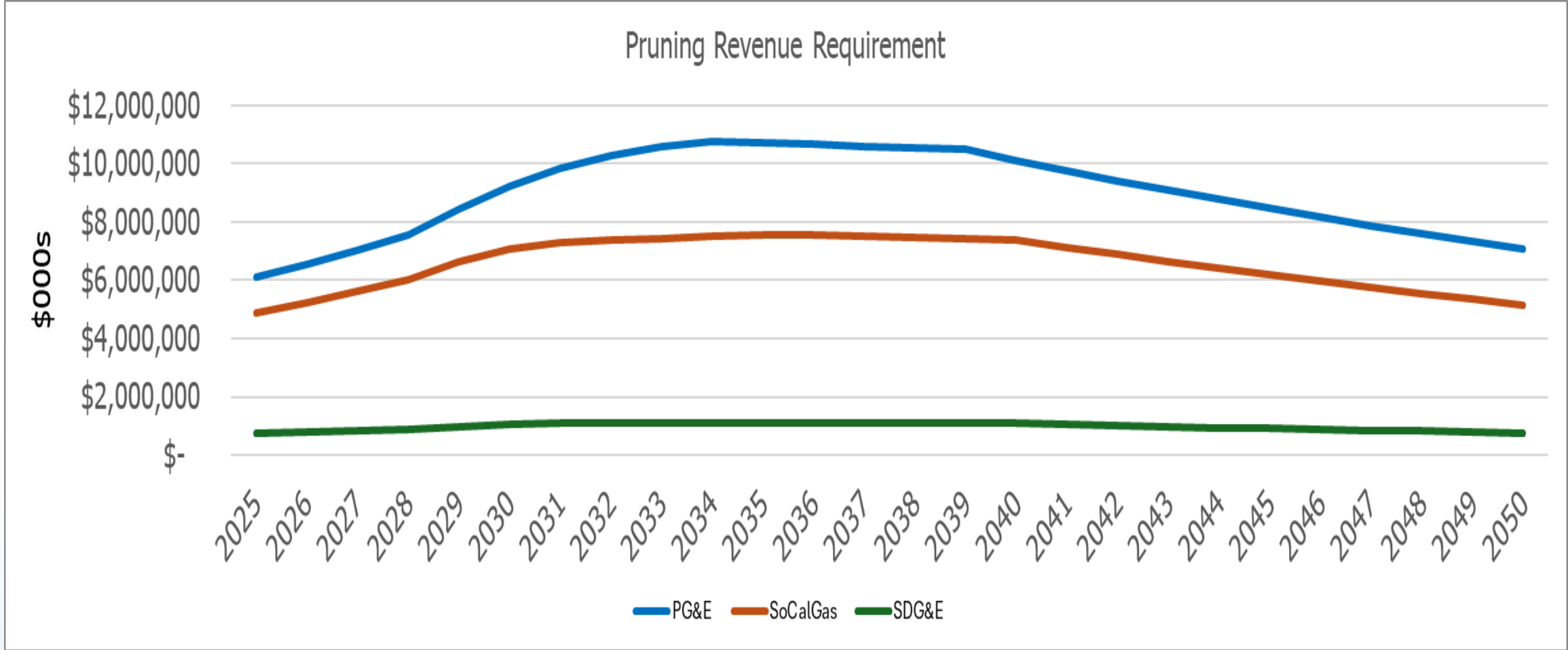


Revenue Requirements: Front Load





Revenue Requirements: Pruning



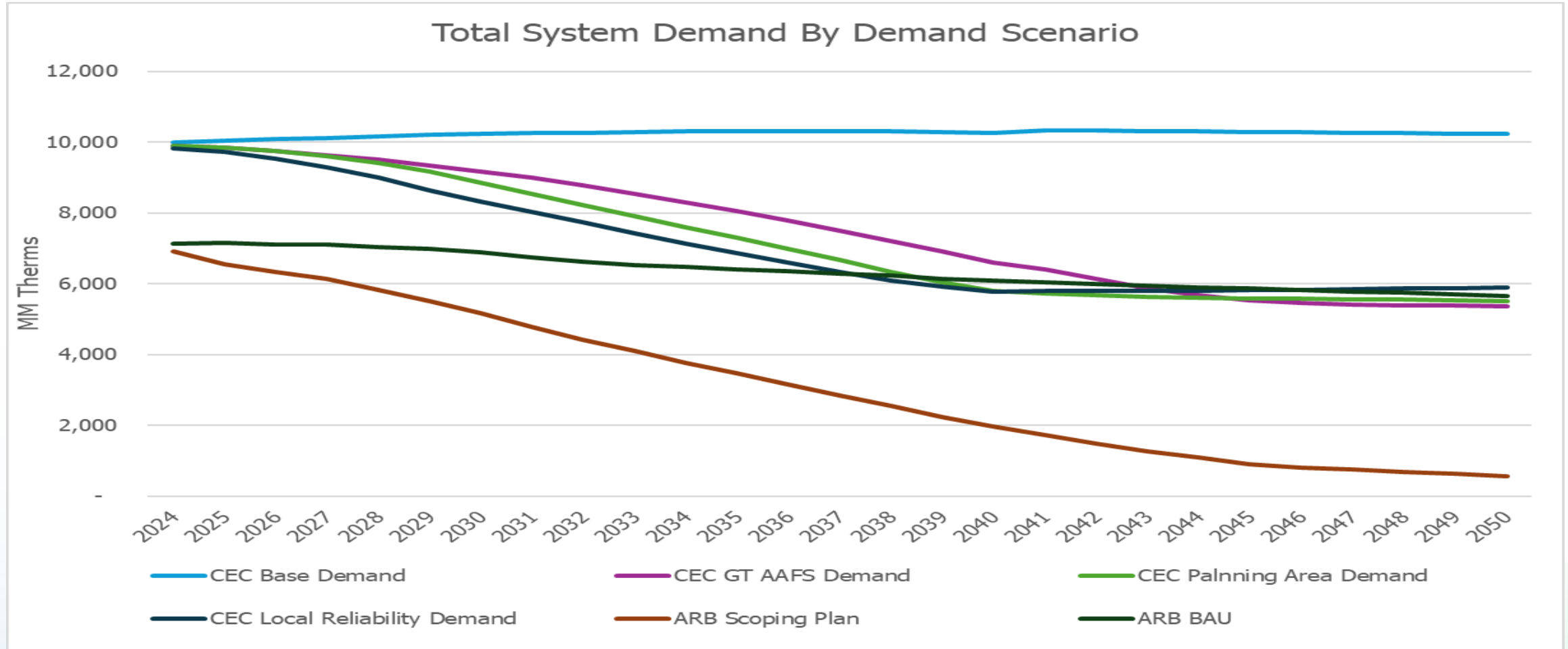


Demand Scenarios

- Purpose
- What are end-use rates and who uses them?
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 - **Demand scenarios**
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Demand Scenarios: Total System Demand



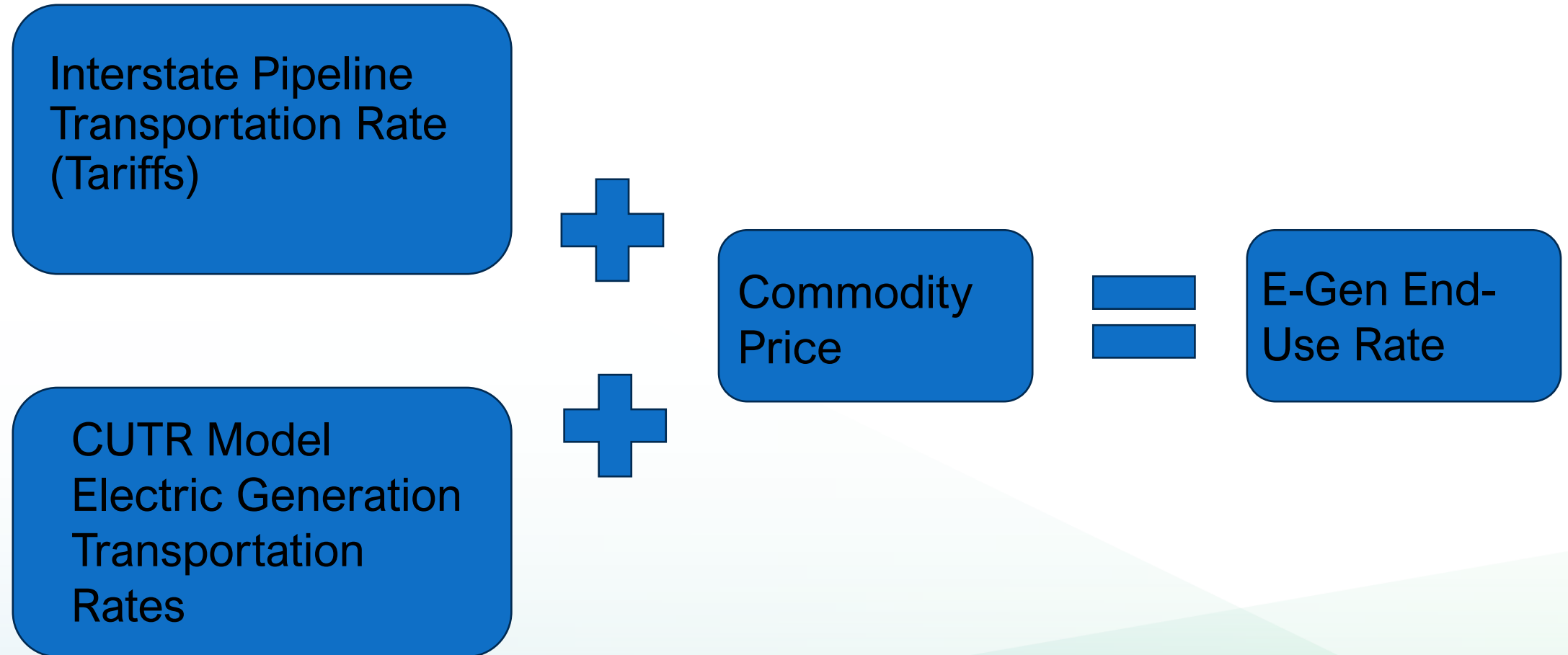


Electric Generator End-Use Rates

- Purpose
- What are end-use rates and who uses them?
- Scenario Development
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 - **Electric generator end-use rates (EGEUR)**
 - California utilities' transportation rates
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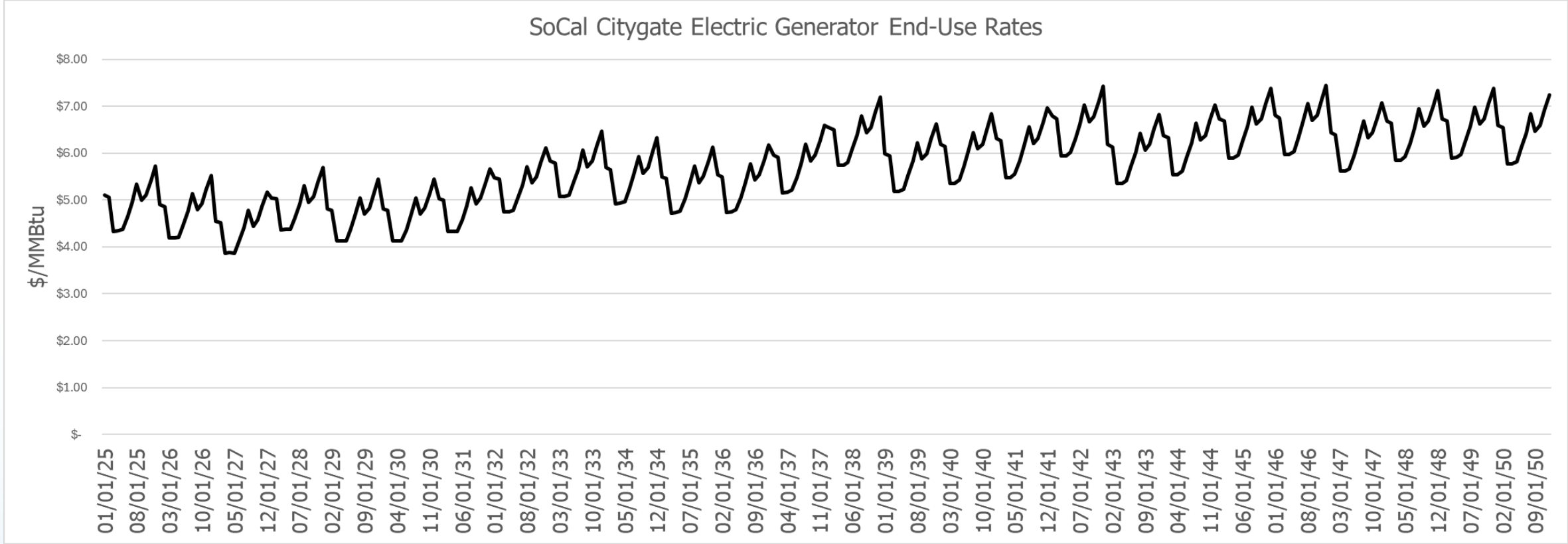


EGEUR Model





EGEUR Select Results



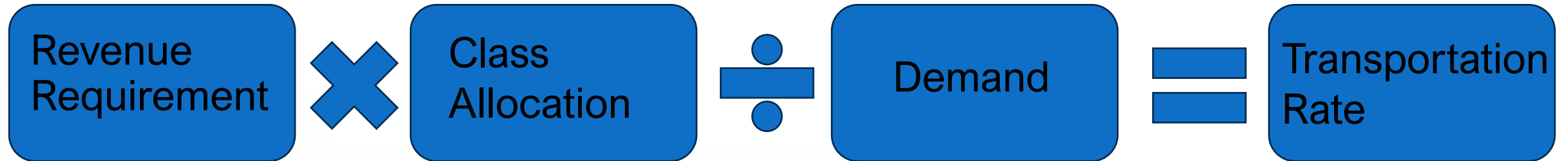


California Utilities' Transportation Rates Modeling

- Purpose
- What are end-use rates and who uses them?
- Scenario Development
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- Transportation Rates Modeling
 - Revenue requirements
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 - Electric generator end-use rates
 - **California utilities' transportation rates (CUTR)**
- Results
- Considerations
- Next steps

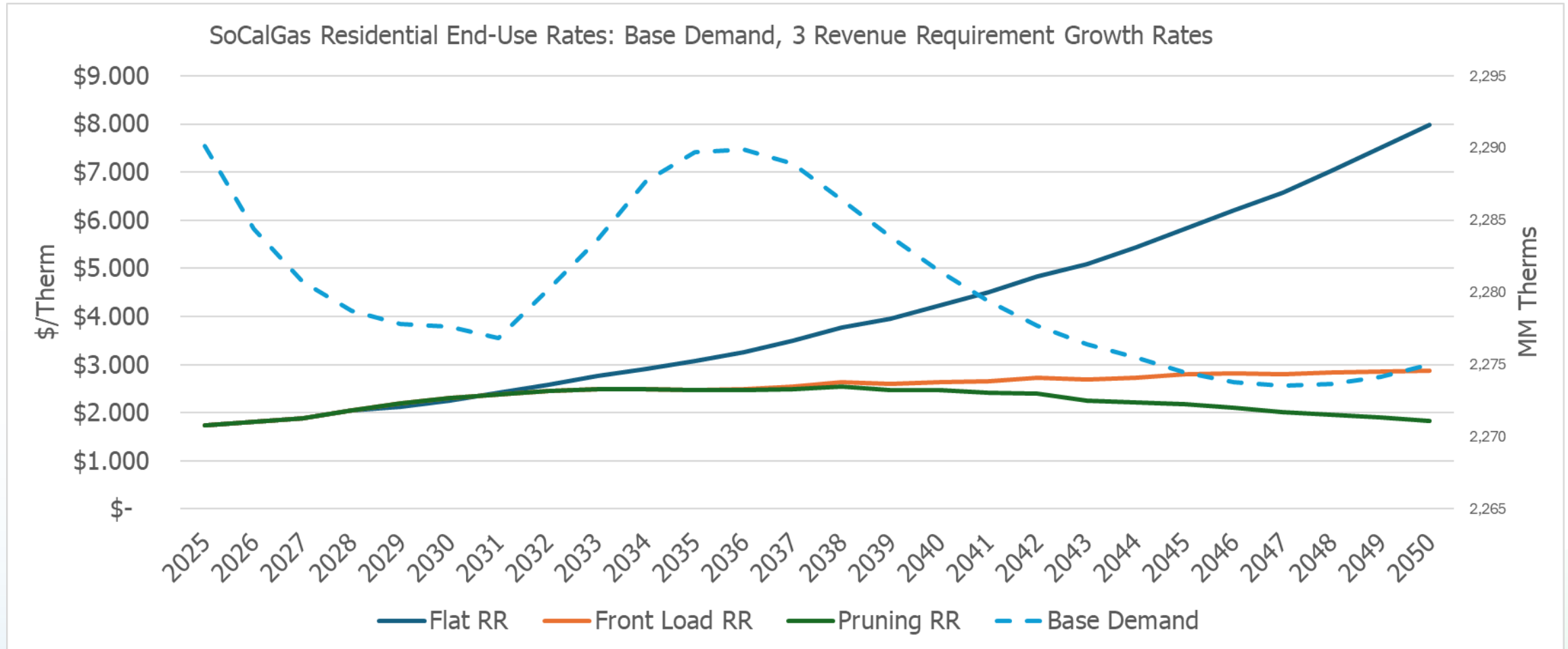


CUTR Model





CUTR Model Select Results





Results

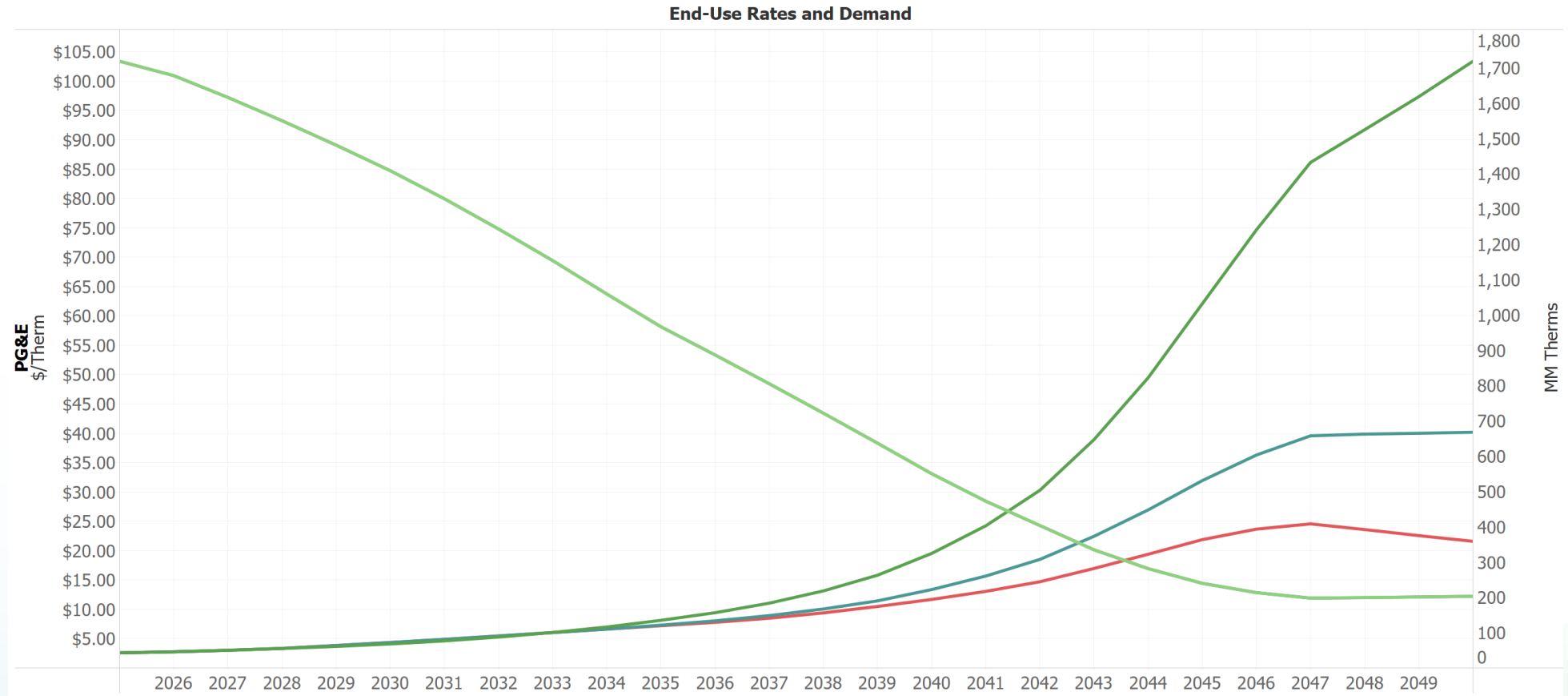
- Purpose
- What are end-use rates and who uses them?
- Scenario Development
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- **Results: End-Use Rates**
- Considerations
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End-Use Rates: PG&E

PG&E Residential End-Use Rates

- GT AAFS 2.5 Demand Scenario
- Constant Growth RR
- Front Load RR
- Pruning RR

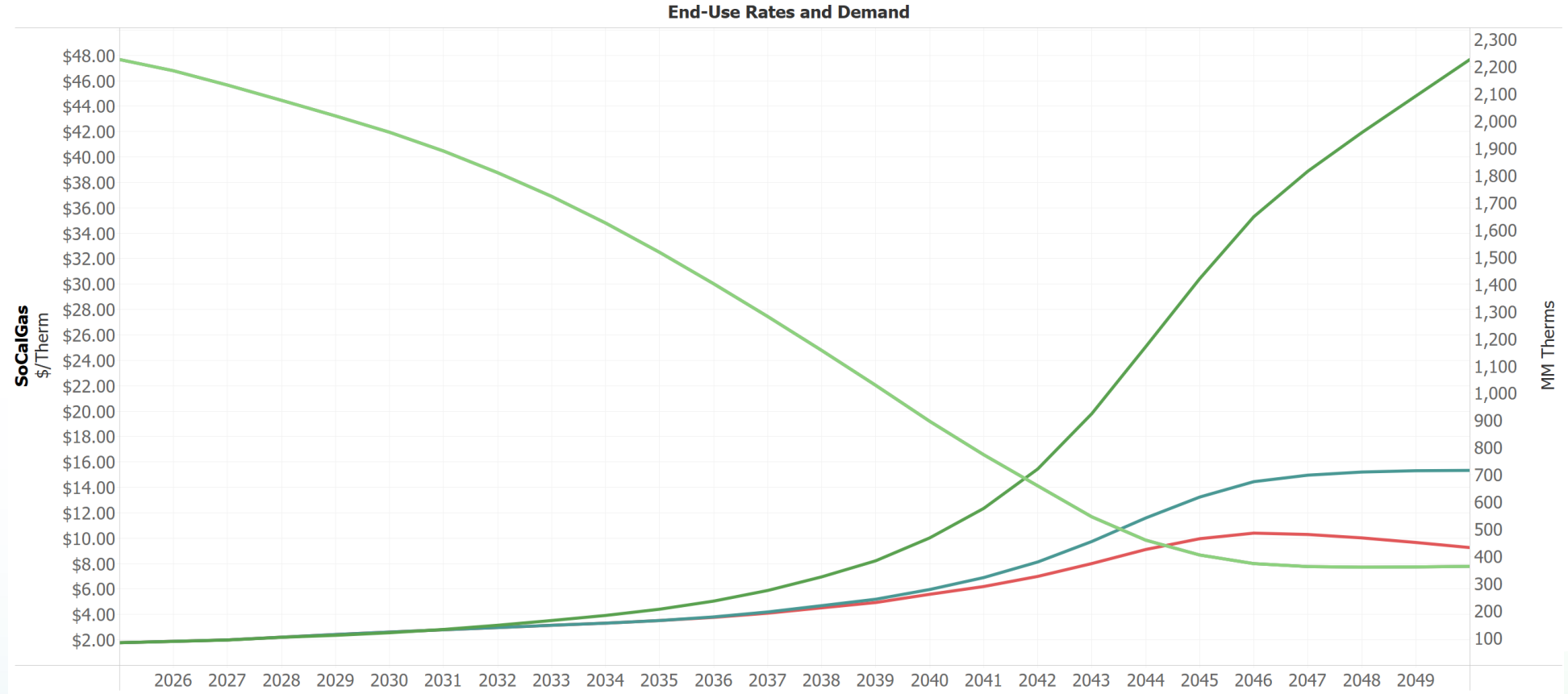




End-Use Rates: SoCalGas

SoCalGas Residential End-Use Rates

- GT AAFS 2.5 Demand Scenario
- Constant Growth RR
- Front Load RR
- Pruning RR

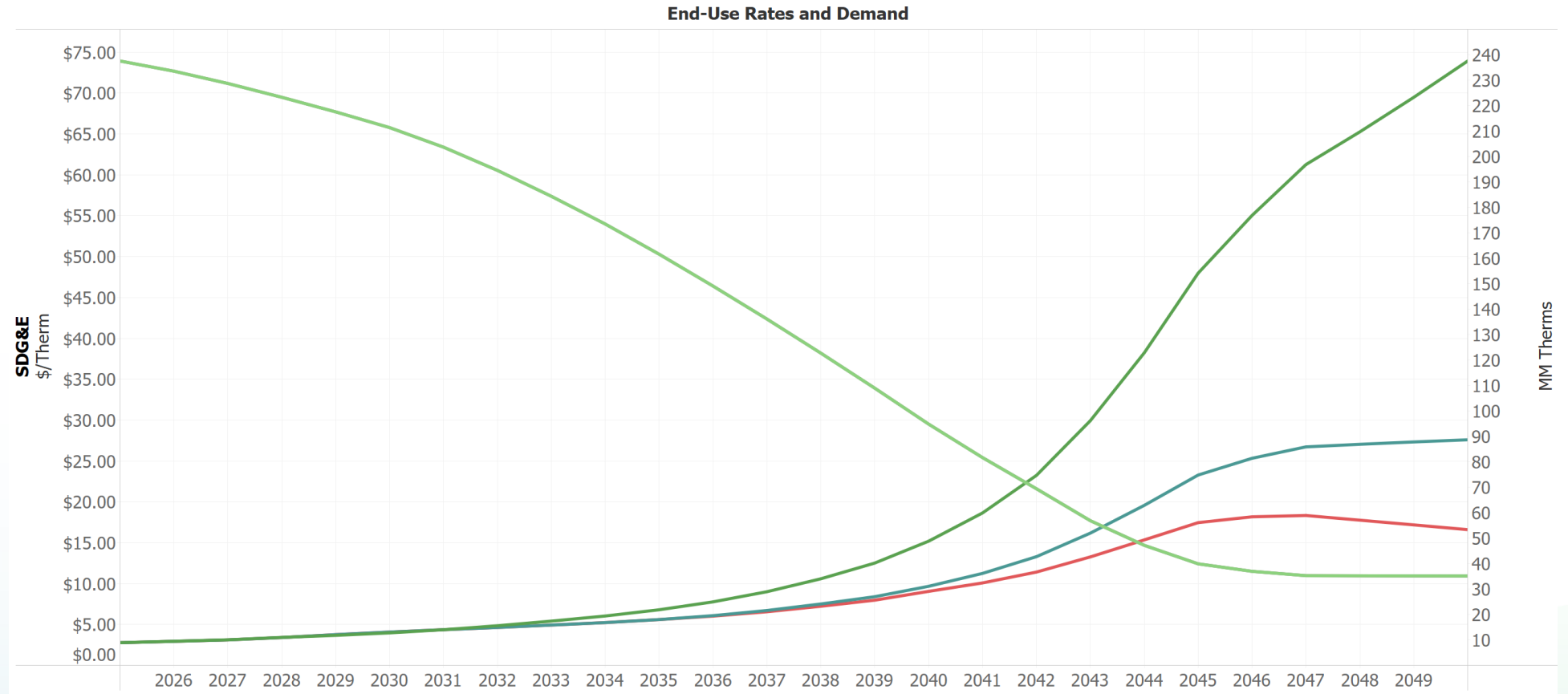




End-Use Rates: SDG&E

SDG&E Residential End-Use Rates

- GT AAFS 2.5 Demand Scenario
- Constant Growth RR
- Front Load RR
- Pruning RR





Considerations

- Purpose
- End-Use Rates
- Scenario Development
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Considerations Continued

- **Results in Later Years:** Rates are high in later years without any intervention
- **End-Use Rate Increases:**
 - Declining demand
 - Increasing transportation rate



Next Steps

- Purpose
- End-Use Rates
- Gas commodity prices
- Transportation Rates Modeling
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Next Steps Continued

- **Receive Feedback and Adjust Model (June – August 2025)**
- **Post Revised Results (September 2025)**
- **Daily Short-Term Modeling (Ongoing)**
- **Revenue Requirement Model (Ongoing)**
- **Class Spread Allocation Model (Ongoing)**



Thank you
