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Electricity Rate Scenarios

Preliminary Inputs and Assumptions



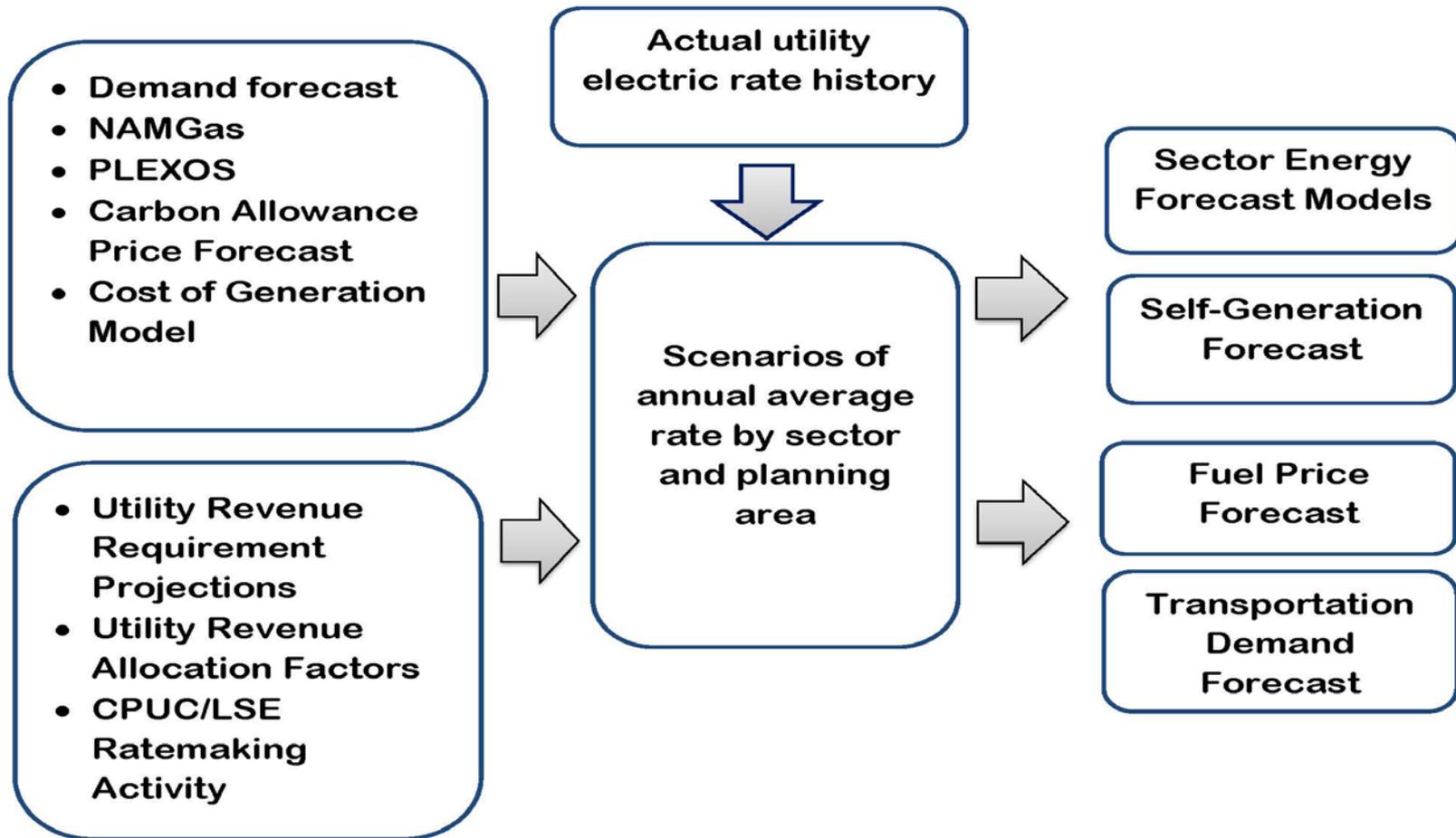
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Energy Assessments Division
California Energy Commission



Rate Forecast Model Overview





Scenario Assumptions

- Mid Case
 - Mid demand, natural gas, and carbon allowance prices
 - Utility projections for distribution and transmission revenue requirements
- High Demand / Low Rates
 - Low natural gas and carbon prices
 - Higher sales to recover transmission and distribution and other relatively fixed costs
 - Less investment in distribution infrastructure
- Low Demand/ High Rates
 - High natural gas and carbon prices
 - Lower demand means fixed costs per kwh of sales are higher
 - More growth in distribution investment



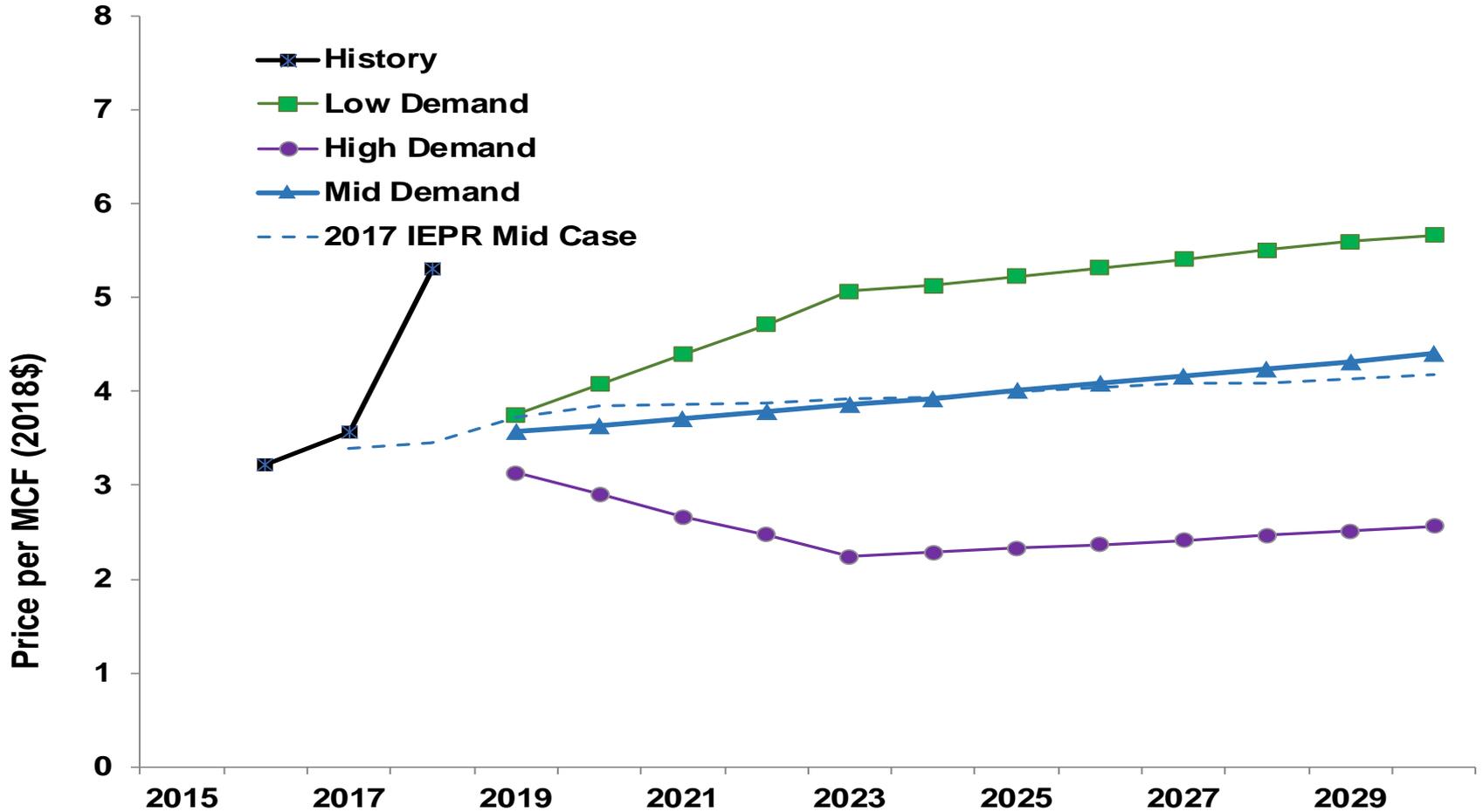
Fuel and Purchased Power

- Wholesale electricity market price is applied to natural gas and generic market purchases
 - Preliminary NAMgas hub price scenarios
 - Declining implied heat rate trend from PLEXOS
 - Carbon Credit Allowance price forecast based on 2018 CARB regulations
- Utility-reported costs for utility-owned resources and existing contracts for existing non-gas-fired resources
 - Utility-submitted IEPR forms will include current and projected energy and capacity resource mix by fuel type and associated procurement cost.
- Staff Cost of Generation model estimates for new renewable resource costs



Natural Gas Price Scenarios

SoCal Gas Hub Prices

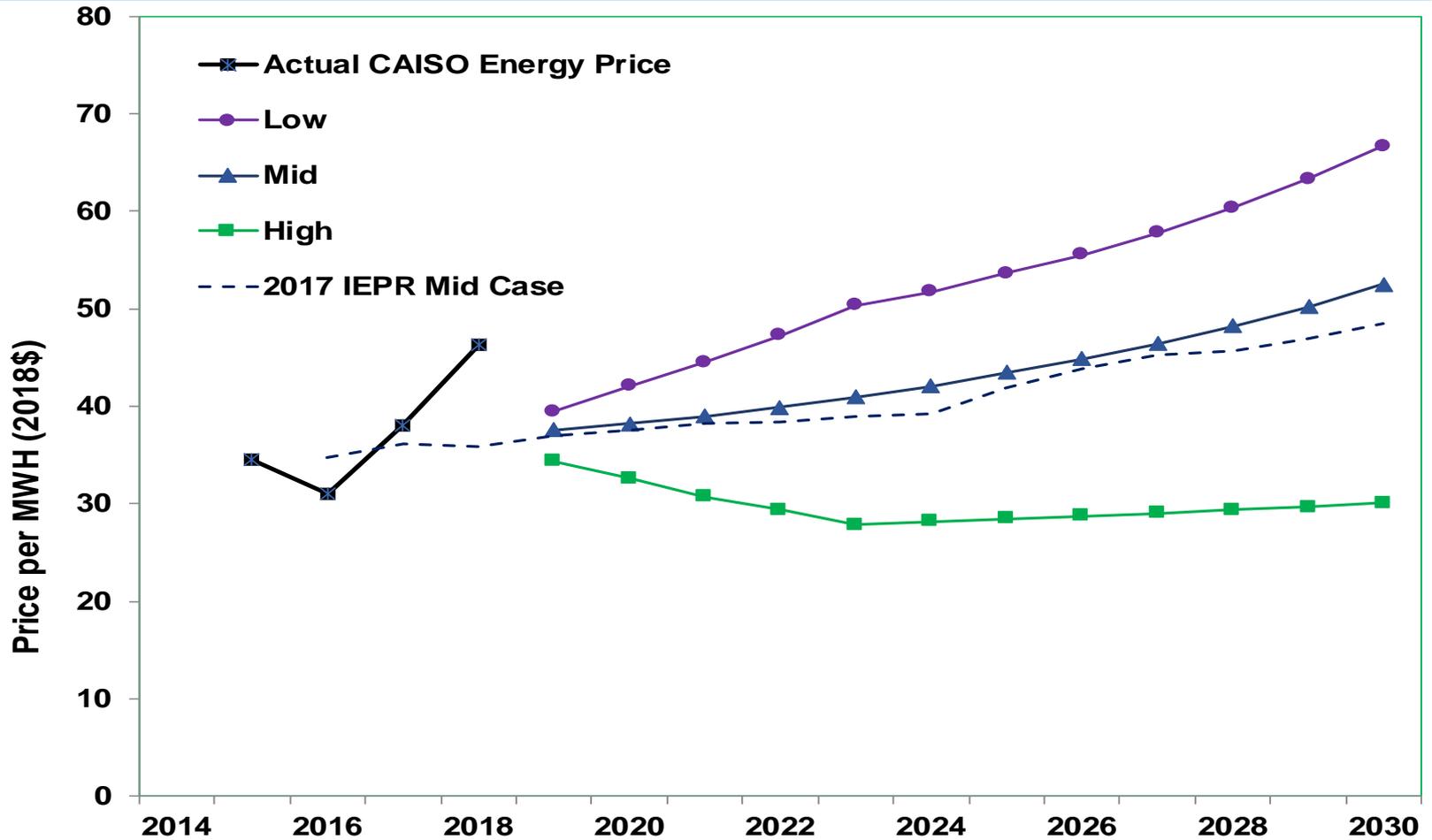


PG&E hub prices are ~ 8% lower; SDG&E prices are ~1% higher

Source: Energy Commission Staff NAMGas Model 2019 IEPR Preliminary Results

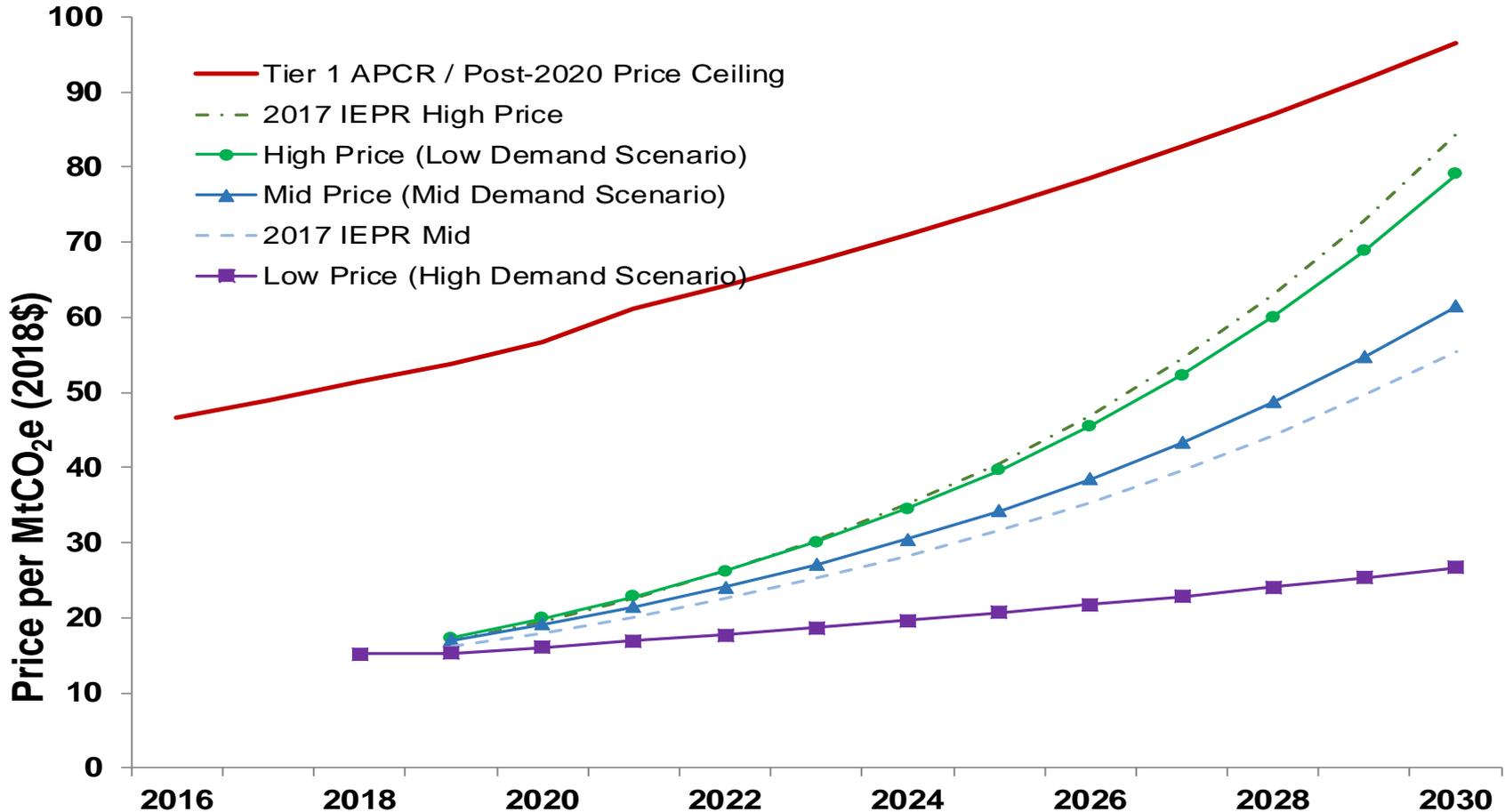


Wholesale Energy Price Scenarios





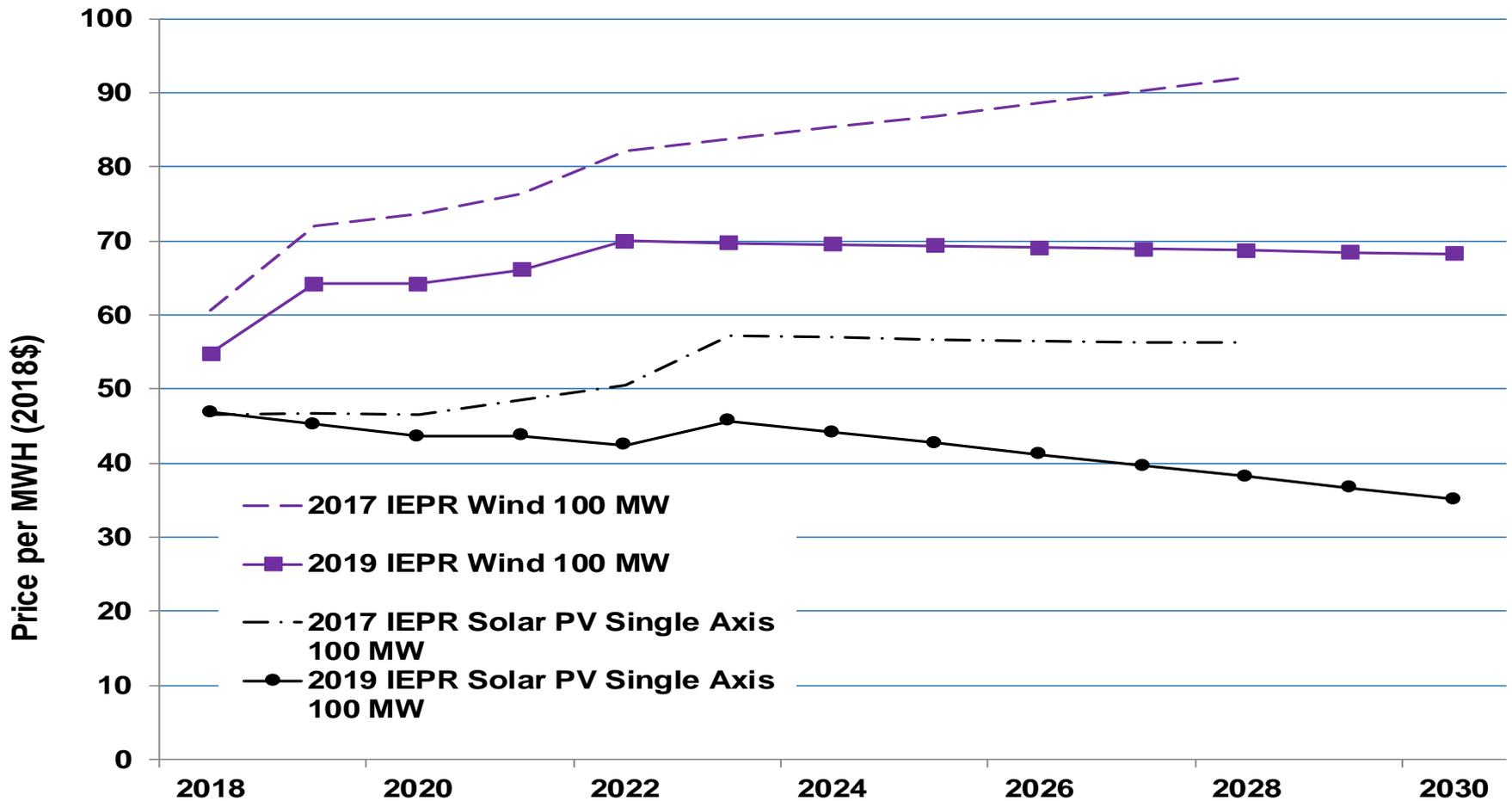
Carbon Allowance Price



Low Price escalates at the Auction Reserve Price growth rate formula
High Price assumes prices reaches the Tier 2 Price in 2030 (\$100 nominal)
Mid Price assumes price reach the Tier 1 price in 2030 (\$78 nominal)



Renewable Resource Purchase Price



Source: Energy Commission Staff Cost of Generation Model



Non-Procurement Revenue Requirements

- Utility-projected revenue requirements to 2030 from IEPR demand forms for IOUs and larger public utilities
 - Distribution
 - Transmission
 - Energy Efficiency and other programs
 - New items requested include electrification investment and programs, and catastrophic events
- Staff review of pending rate applications, advice letters, and CAISO transmission studies
- Preliminary rates will use staff updates to **2017 IEPR** submittals,
- Revised rates will use **2019 IEPR** submittals, due in June.



Distribution Revenue Requirement Scenarios

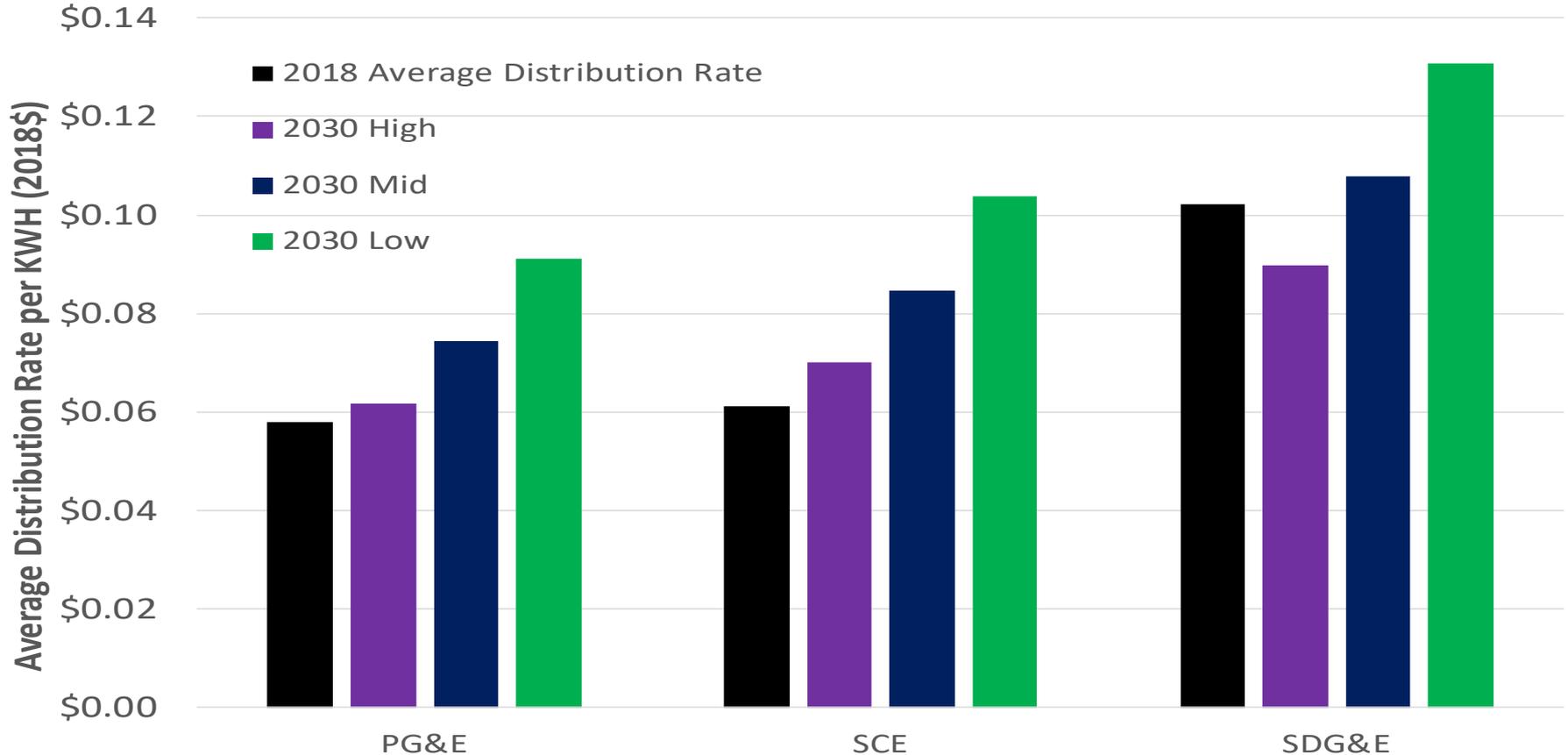
- IOU forecast, as adjusted, for Mid case
- High and Low scenarios reflect range of possible investment for grid modernization, electrification, and distributed resource integration.
- Scenarios will be reevaluated for revised rate forecast.

Average Annual Percentage Growth in Total Distribution Revenue Requirements

| | Mid | High | Low |
|-------|-------|-------|------|
| PG&E | 1.6% | 1.3% | 2.1% |
| SCE | 2.4% | 1.9% | 3.0% |
| SDG&E | -0.1% | -0.4% | 0.3% |



Distribution Rate Scenarios



In the Low Demand Scenario with greater distribution system investment and declining demand, inflation-adjusted distribution rates increase an average of about 2% annually in SDGE, and 4% in SCE and PG&E.