



California Energy Commission

Revised 2013 IEPR Electricity and Natural Gas Demand Forecast

Revised CED 2013 Workshop

California Energy Commission

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Electricity Rate Scenarios

- Used Energy and Environmental Economic's (E3) GHG Calculator to develop 3 scenarios
- E3 calculator allows users to create scenarios by inputting assumptions for:
 - Efficiency program savings
 - Natural gas and coal rates
 - Electricity demand
 - Renewable generation
 - Combined Heat and Power (CHP)
 - Demand response
 - Carbon prices



Change in Electricity Rates

Revised rates are roughly 20% lower in the high and mid demand cases, and 15% lower in the low demand case than preliminary rates.

Year/Period	High Demand	Mid Demand	Low Demand
Average 2024 Price (2012\$/kWh)			
Preliminary	17.4	18.5	19.6
Revised	14.9	16.4	18.0
Percent Change versus 2012 (2012-24)			
Preliminary	31.3%	39.2%	47.3%
Revised	10.5%	21.9%	33.6%



Revised Electricity Forecast Changes

- Updated 2013 rates
- Updated natural gas hub prices
- Updated carbon auction prices
- Updated carbon allocation methodology
- Updated amount of renewable generation
- Modified the transmission and distribution revenue requirement forecasts



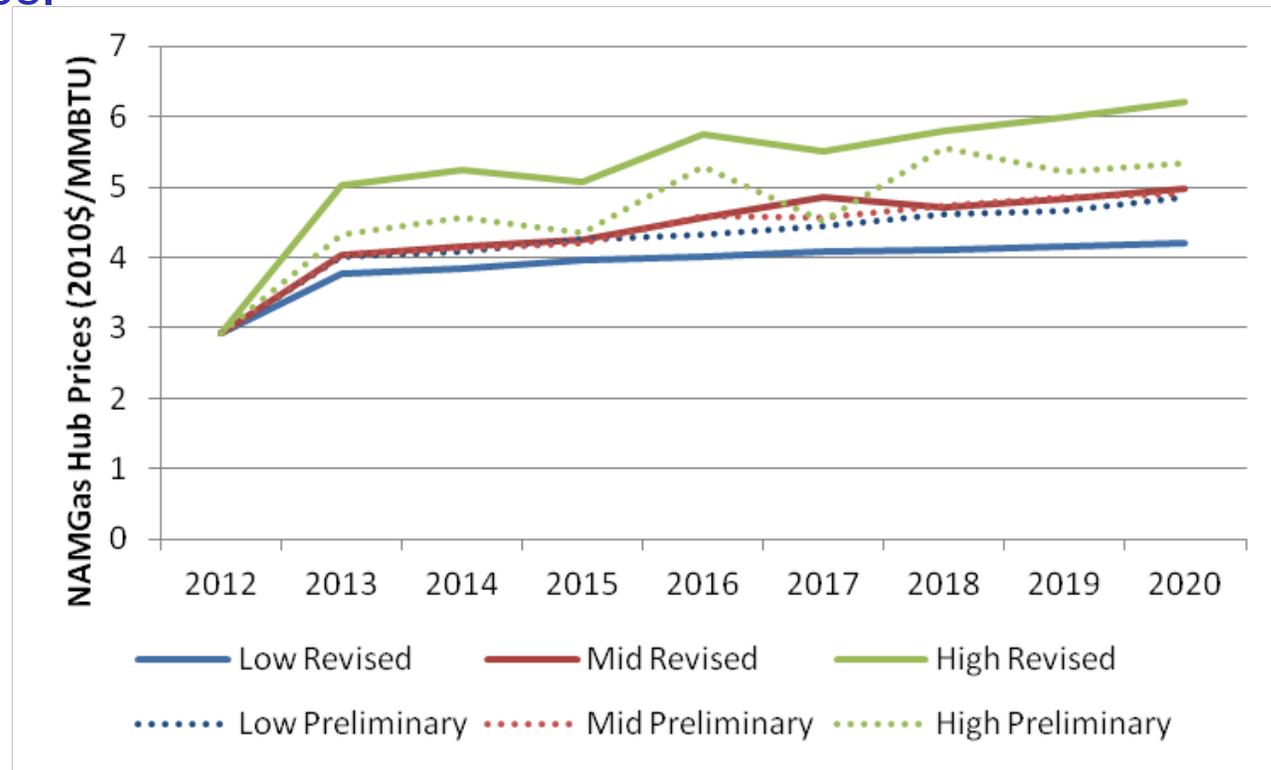
2013 Electricity Rates

- Since natural gas prices significantly increased from 2012 to 2013, E3's GHG Calculator projected a significant increase in rates from 2012 to 2013. In the preliminary rate forecast these 2013 rates were used for some utilities.
- The revised rate forecast uses additional rate information to estimate 2013 rates instead of using the calculated rates.



Natural Gas Hub Prices

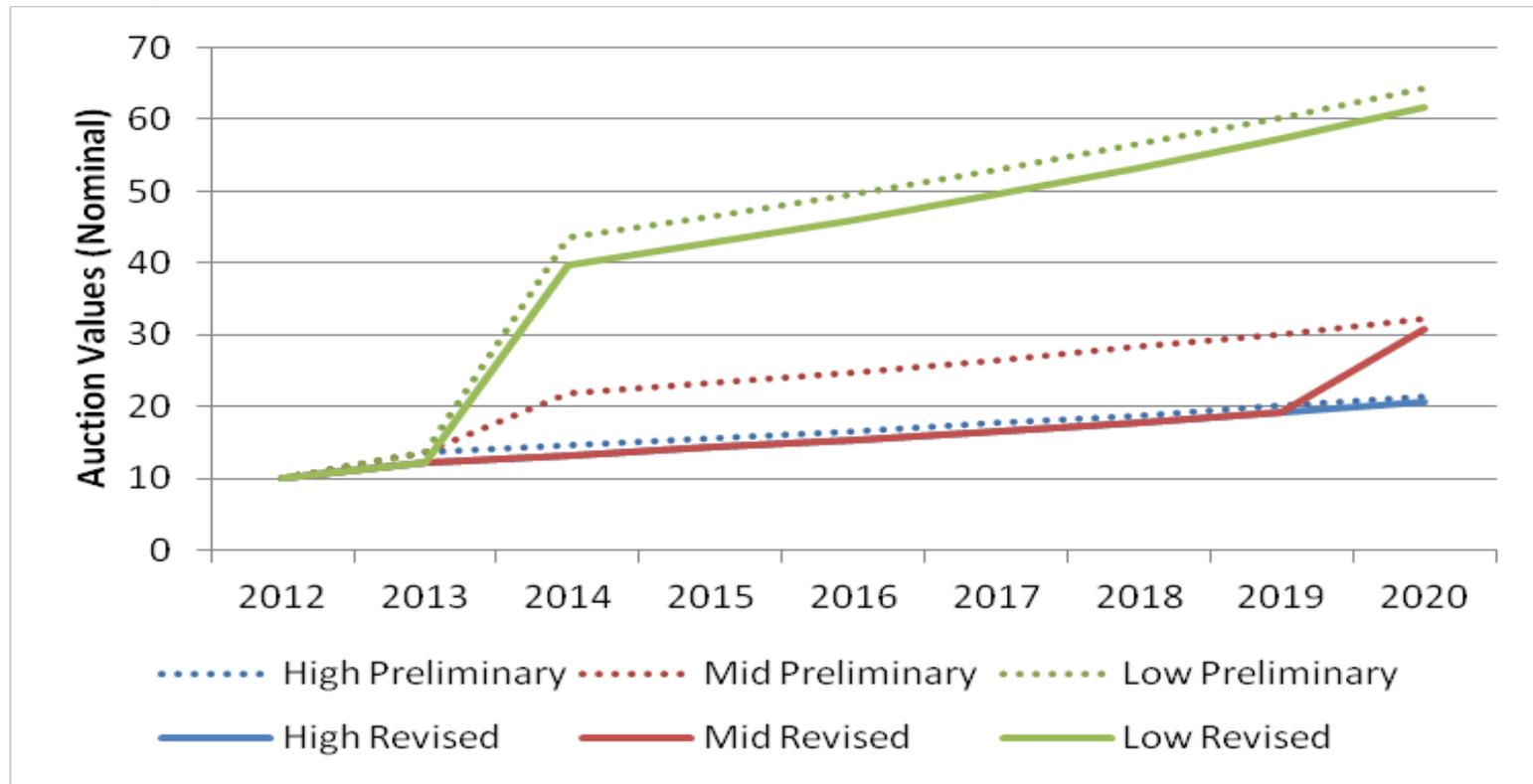
The natural gas prices were revised and led to a wider range of prices for California and the planning area regional modeled hubs.





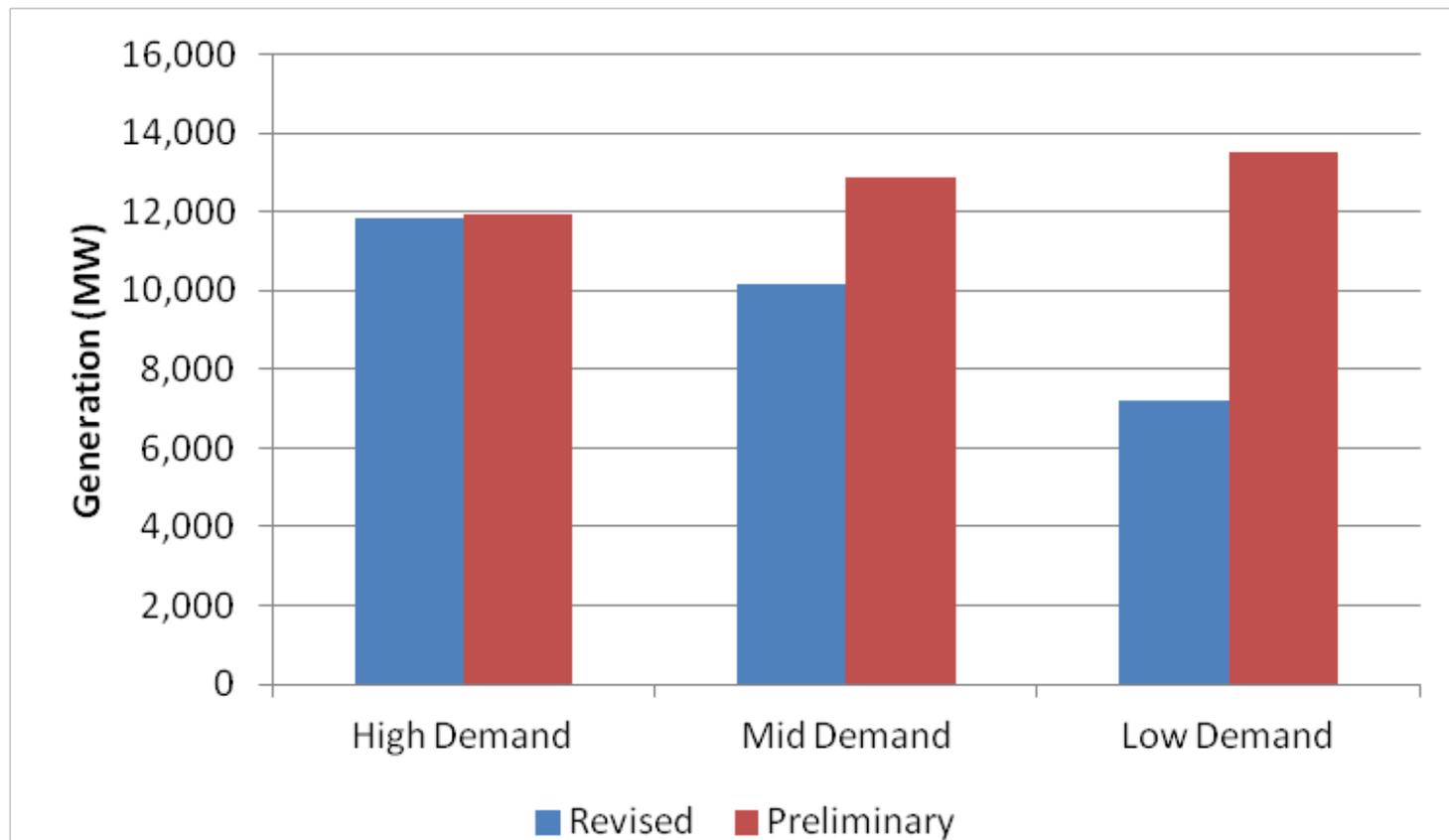
Carbon Auction Price

The carbon auction prices were updated to reflect recent analyses of potential auction prices and auction results.





2020 Renewable Generation





Allowance Auction Allocation

- After reviewing the auction revenue allocation methodology for specific energy sectors, the following modifications were made:
- Residential revenue requirement impacts were fully covered by auction revenues.
- Small commercial revenue requirement impacts were covered by auction revenues.
- No industrial revenue requirement impacts were covered by auction revenues.



Transmission and Distribution

Revenue requirements were modified to reflect a wider range of potential revenue requirements and to be consistent with model documentation, 2010 LTPP analyses, and internal Energy Commission analyses.

Demand Forecast	Annual Transmission Cost Growth	Annual Distribution Cost Growth	Weighted Annual Growth Rate
High Demand	2.98%	0.92%	1.46%
Mid Demand	4.6%	1.33%	2.14%
Low Demand	8.2%	1.33%	3.04%

Source: Energy Commission Analysis of LTPP 2010 Evaluation Metric Calculator

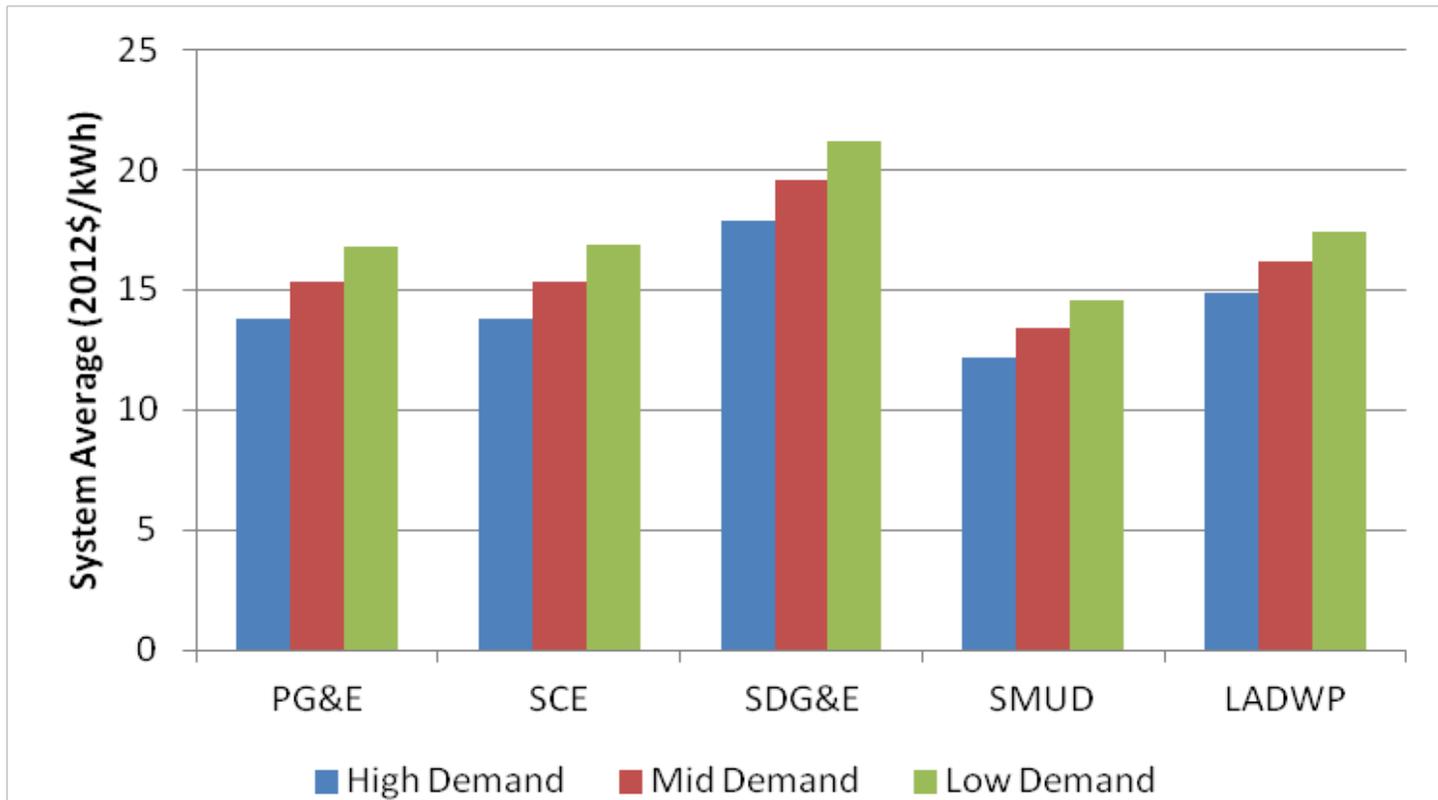


Scenario 2020 Input Assumptions

	High Demand	Mid Demand	Low Demand	Units
Energy Efficiency	Low	Mid	High	
Natural Gas Prices	\$4.11	\$4.86	\$6.07	2008\$/MMBTU
Photovoltaic Installed Capacity	2,189	2,311	2,582	MW
Demand Response	0	5%	5%	Percent of Load
Renewable Generation	11,800	10,150	7,200	MW
Combined Heat and Power	1,427	2,995	4,834	MW
Carbon Prices	\$17	\$25	\$50	2008\$/MTCO ₂ e
Coal Prices	\$2.06	\$2.06	\$2.06	2008\$/MMBTU



Revised 2024 Electricity Rates



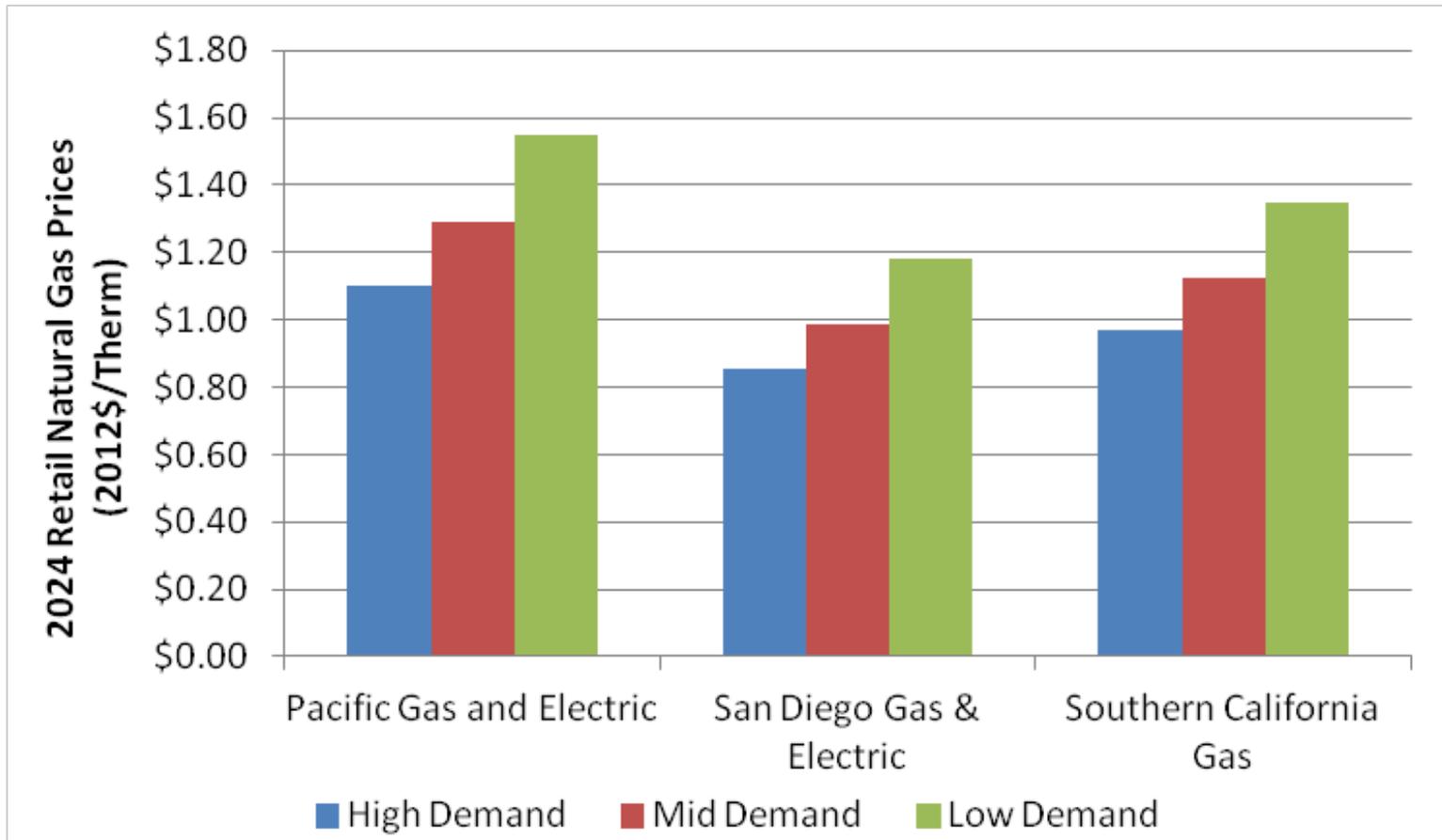


Revised Natural Gas Forecast Changes

- Introduced increased coal fired generation retirements and conversions
- Introduced distinct high and low cost environments
- Updated infrastructure capacity additions to export natural gas to Mexico
- Improved performance of LNG sector



Revised 2024 Natural Gas Rates





Uncertainties

- San Bruno/SONGs disallowances
- Updated renewable generation costs
- Distributed generation
- Energy Resource Recovery Account
- Transmission & Distribution costs
- Wholesale electricity market volatility
- Coal fired generation
- Natural gas exports
- Natural gas plays in California