California Energy Commission

IEPR Workshop

California Energy Demand (CED) 2011 Revised Forecast:

PG&E Planning Area Electricity Forecasts

February 23, 2012

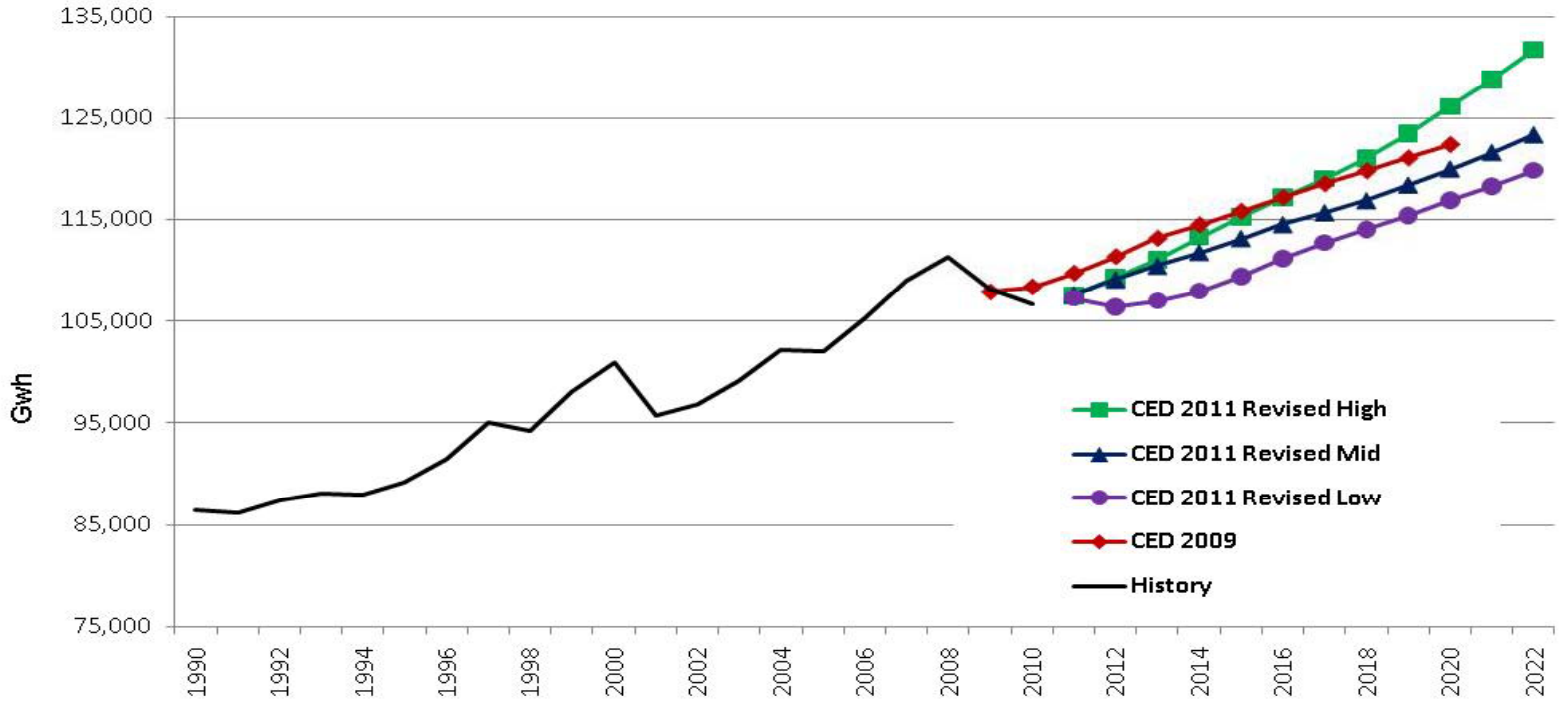
Chris Kavalec
Demand Analysis Office
Electricity Supply Analysis Division
Chris.kavalec@energy.state.ca.us / 916-654-5184

Summary

- Slightly lower consumption and sales growth compared to previous forecasts
- Higher peak demand growth compared to previous forecasts
- Climate change adds 350-450 MW of peak demand by 2022 (1.3-1.6%); PV adoption reduces peak by 600-700 MW by 2022 (2-3%)
- TV standards reduce consumption by 1,000 GWh in 2022 (0.8%); EVs increase consumption by 1,000-2,000 GWh (0.8-1.5%) in 2022

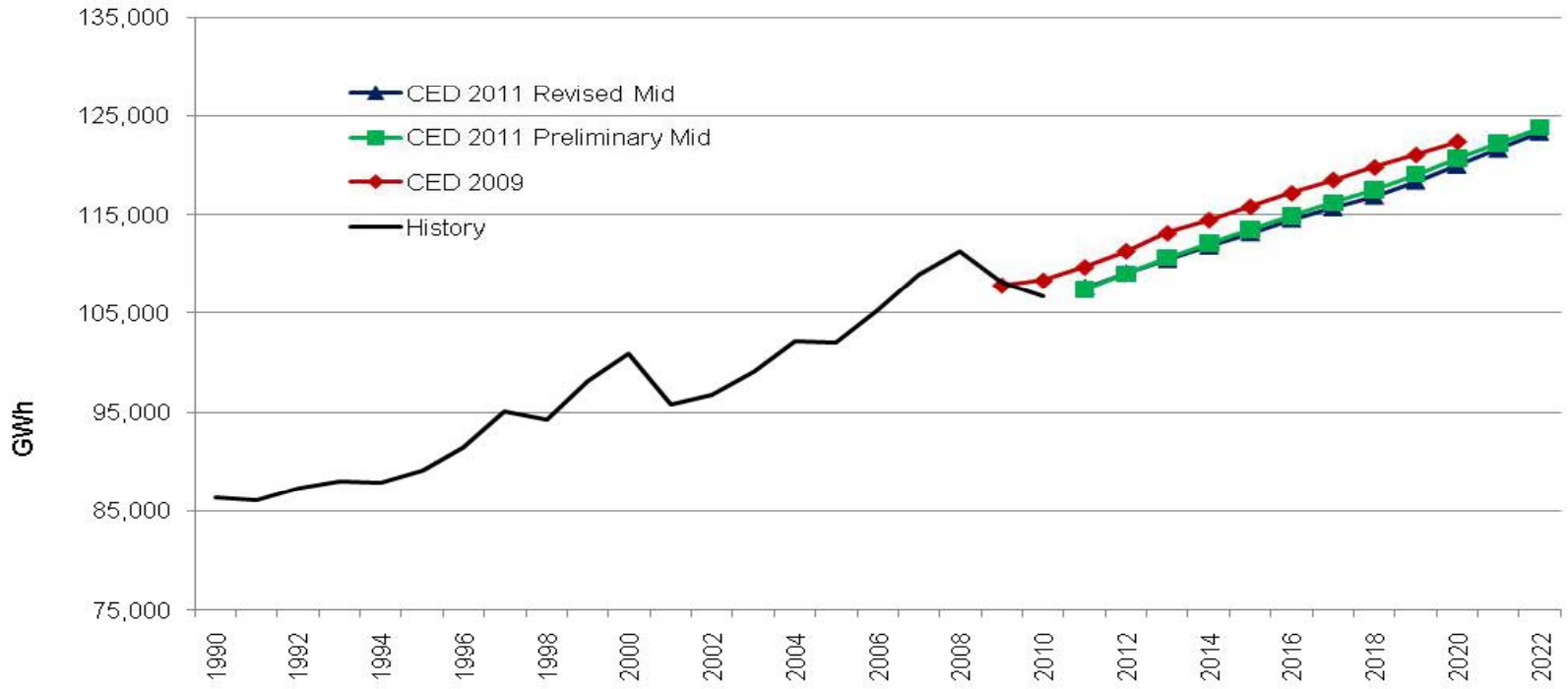
PG&E Electricity Consumption

Average annual growth 2011-2022: 1.9% in high case, 1.0% in low case



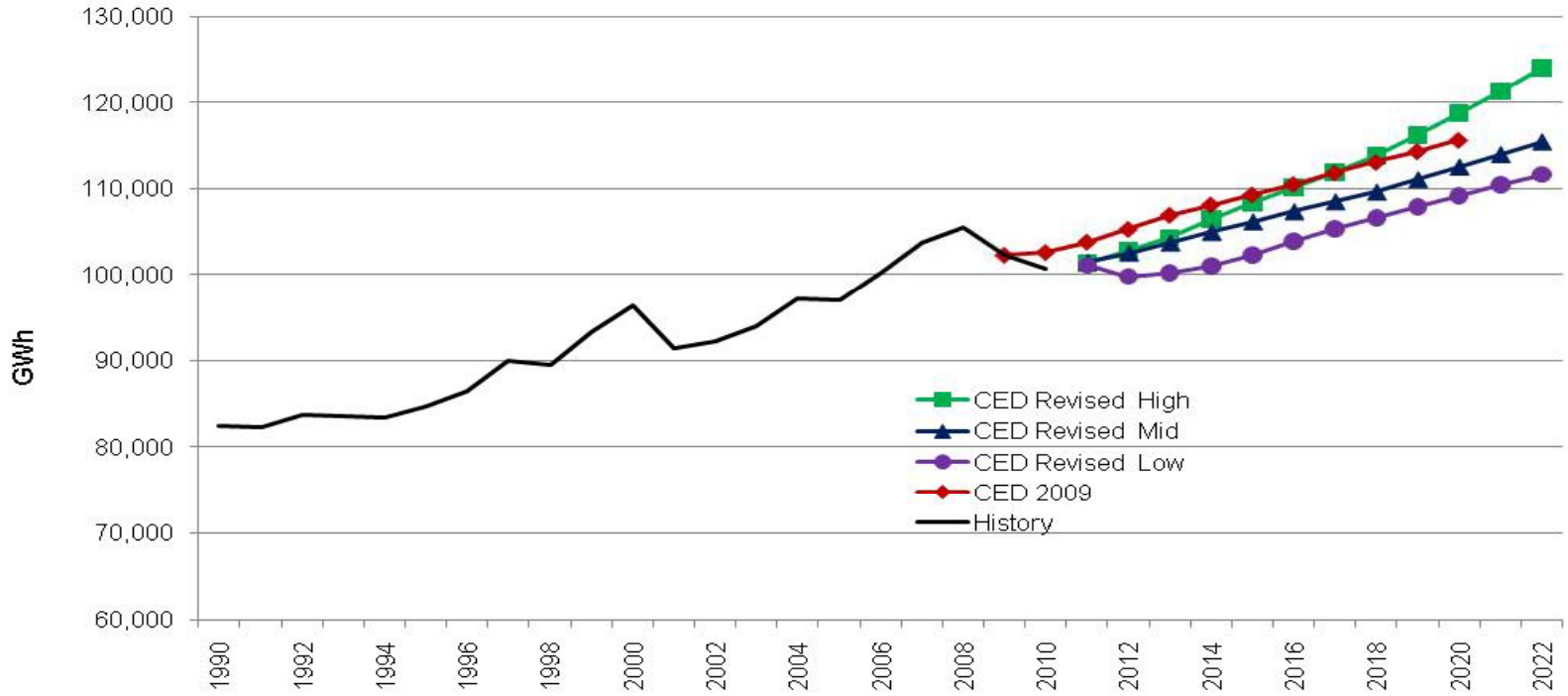
PG&E Electricity Consumption

Average annual growth 2011-2020: 1.22% in revised mid, 1.31% in preliminary mid, 1.23% in CED 2009



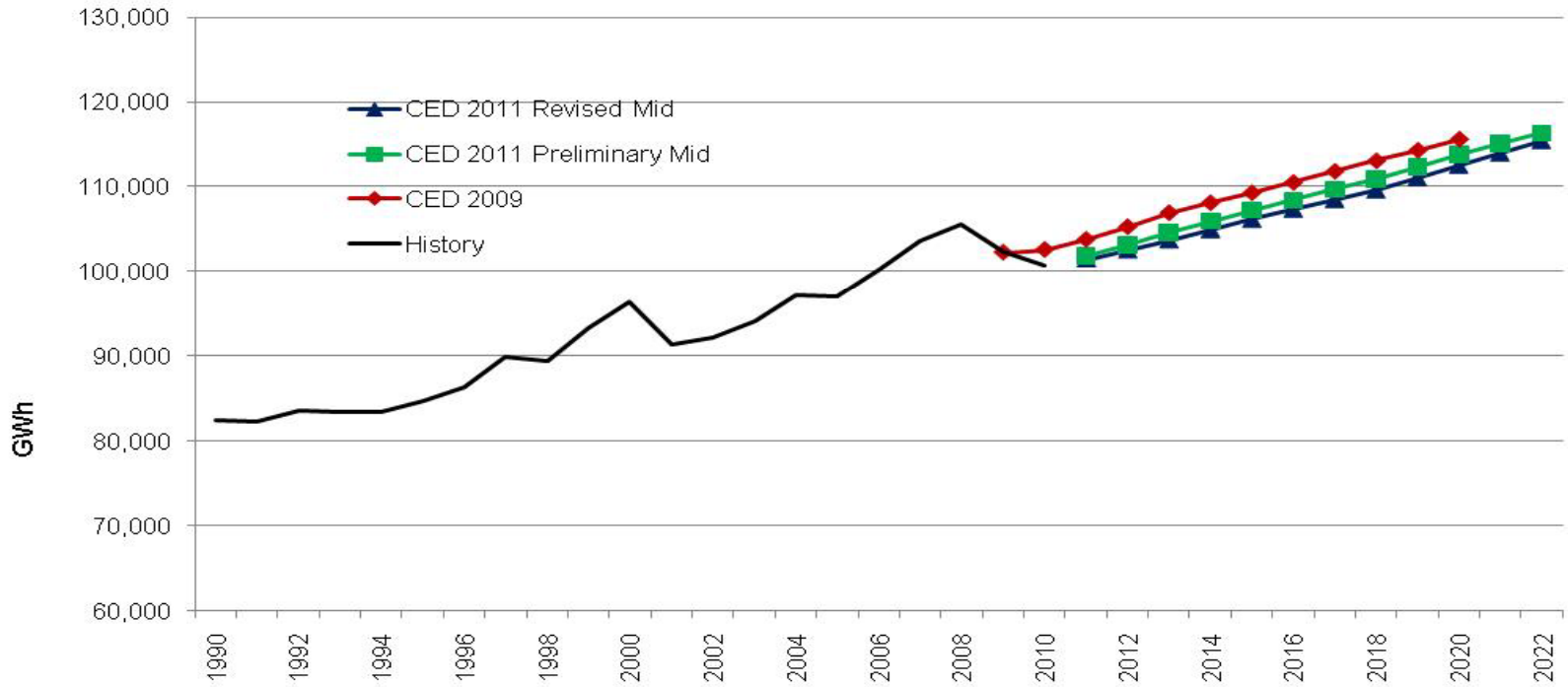
PG&E Electricity Sales

Average annual growth 2011-2022: 1.8 percent in high case, 0.85% in low case



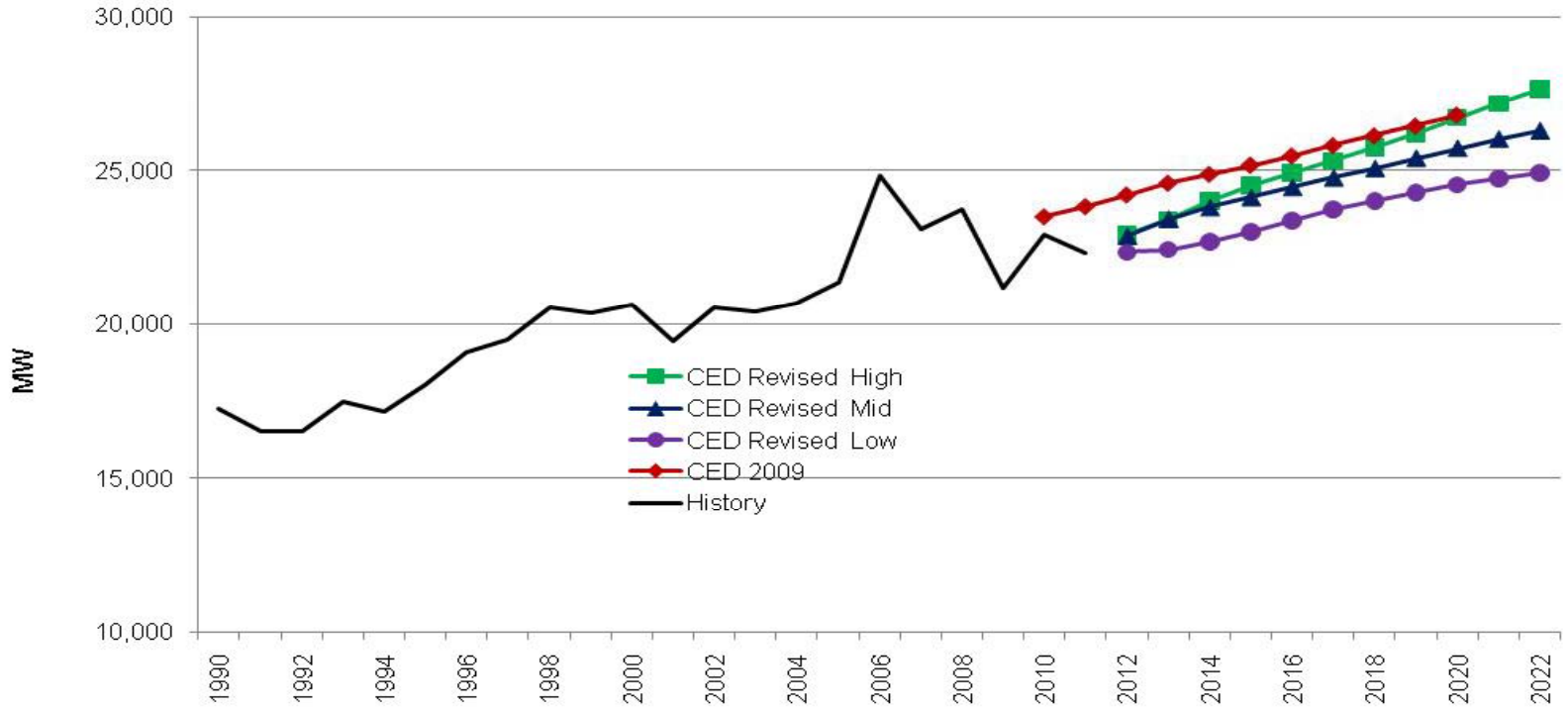
PG&E Electricity Sales

Average annual growth 2011-2020: 1.16% in revised mid, 1.23% in preliminary mid, 1.21% in CED 2009



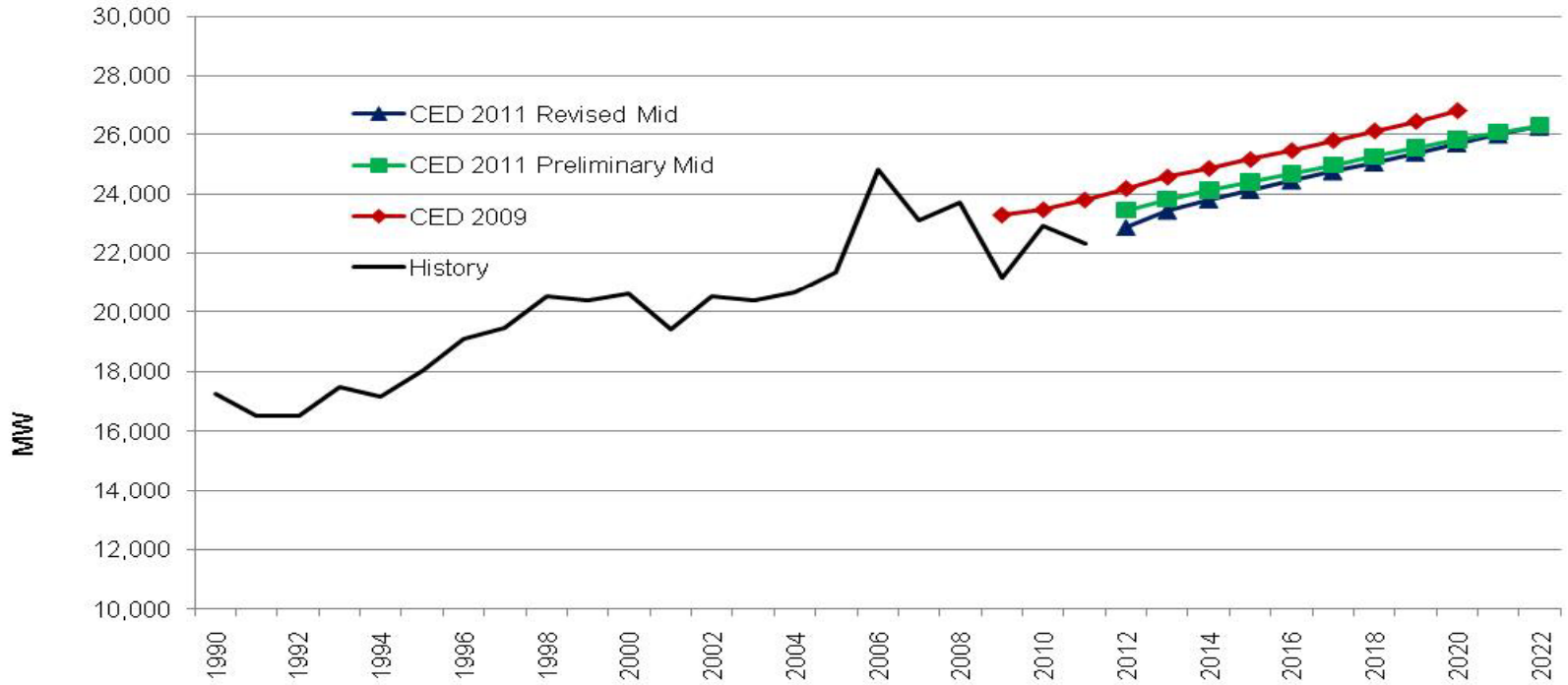
PG&E Peak Demand

Average annual growth 2011-2022: 2.0% in high case, 1.0% in low case



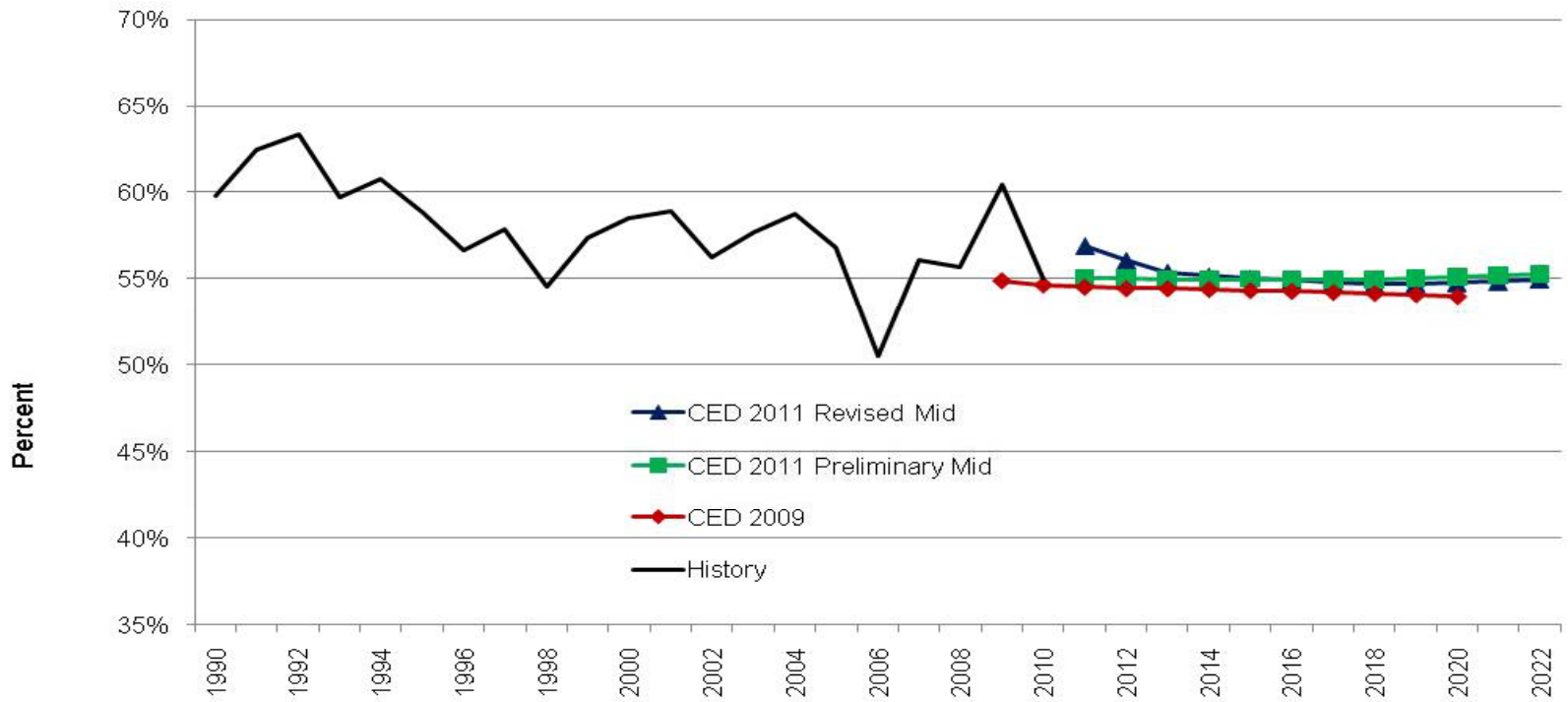
PG&E Peak Demand

Average annual growth 2011-2020: 1.59% in revised mid, 1.22% in preliminary mid, 1.33% in CED 2009



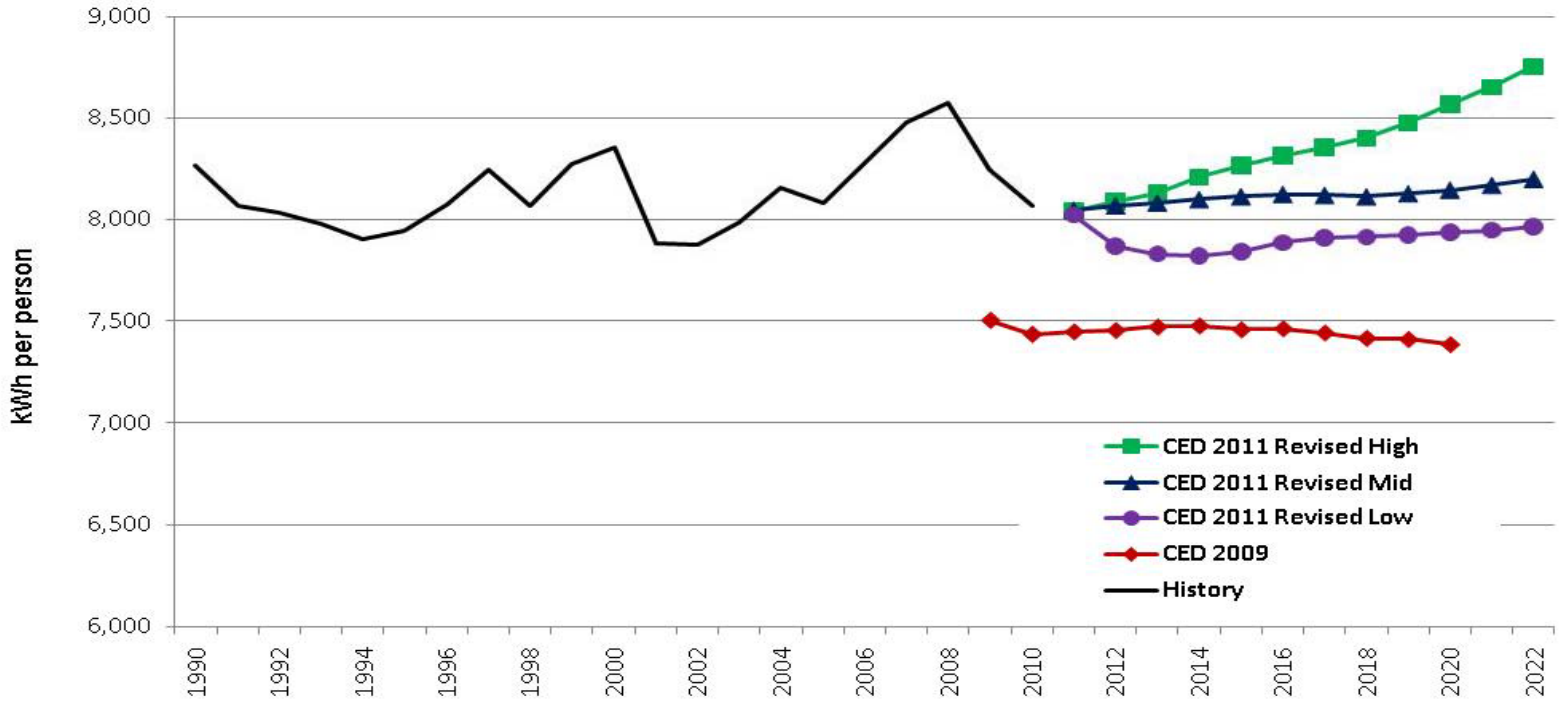
PG&E Load Factors

CED 2011 Revised similar to preliminary by 2013



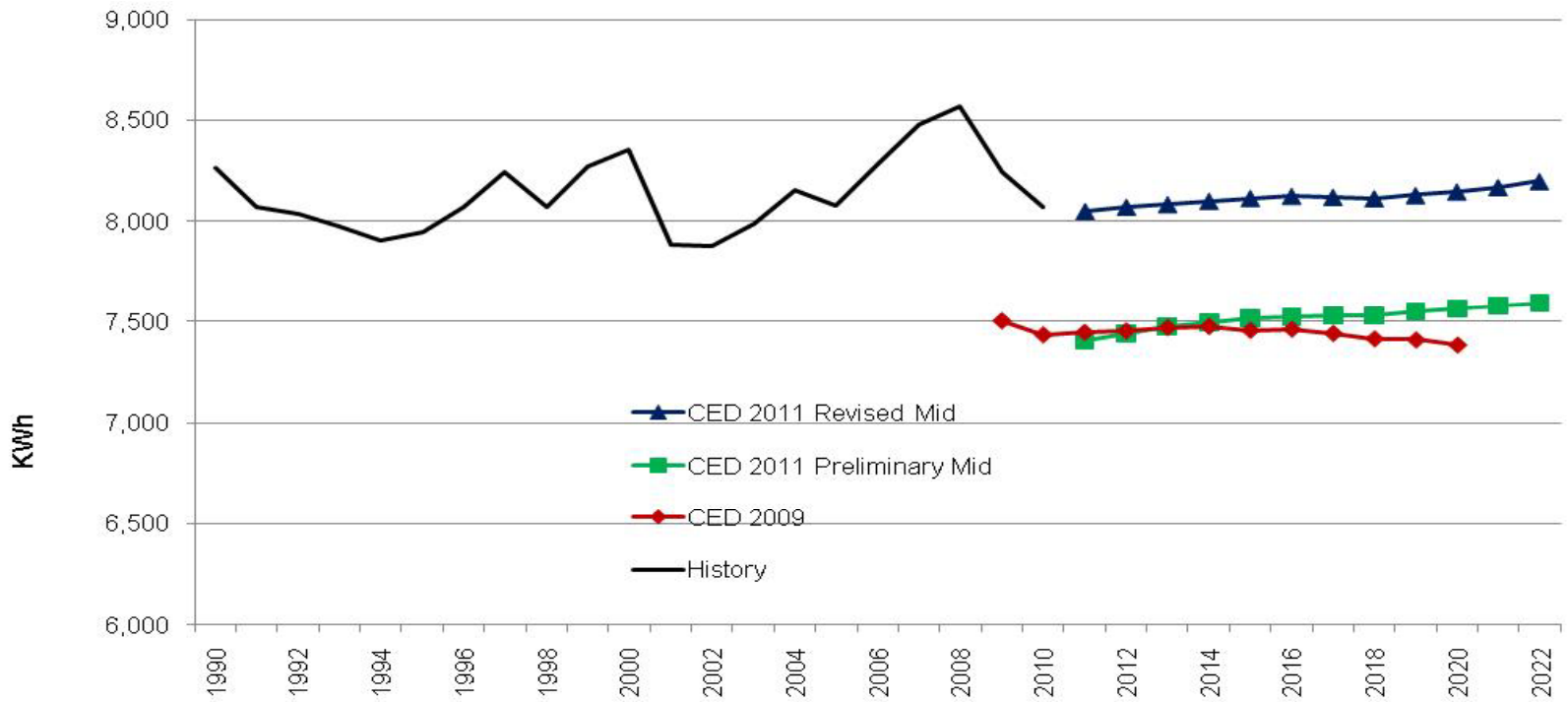
PG&E Per Capita Consumption

EVs push per capita consumption up toward the end of the forecast period



PG&E Per Capita Consumption

Population adjustment pushes per capita consumption above CED 2009 levels

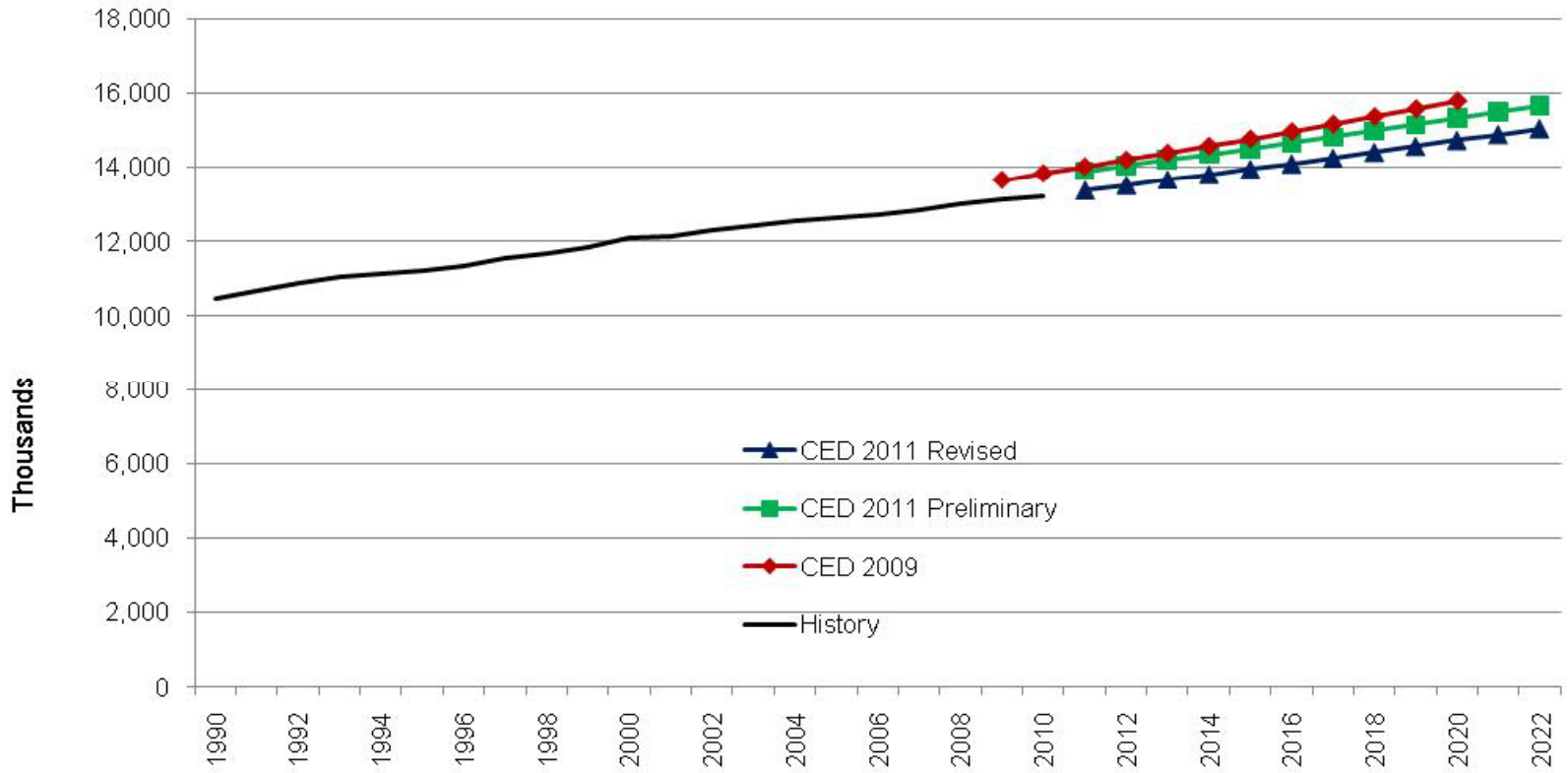


PG&E Forecast: Factoids

- Of three major sectors, growth in consumption is fastest in residential sector (1.64% per year 2011-2022 in mid case), followed by commercial (1.53%), and industrial (0.30%)
- Strongest growth in construction energy use among all planning areas, increasing industrial sector growth
- Average annual growth 2011-2022 in agricultural and TCU/streetlighting sectors slightly less than 1 percent

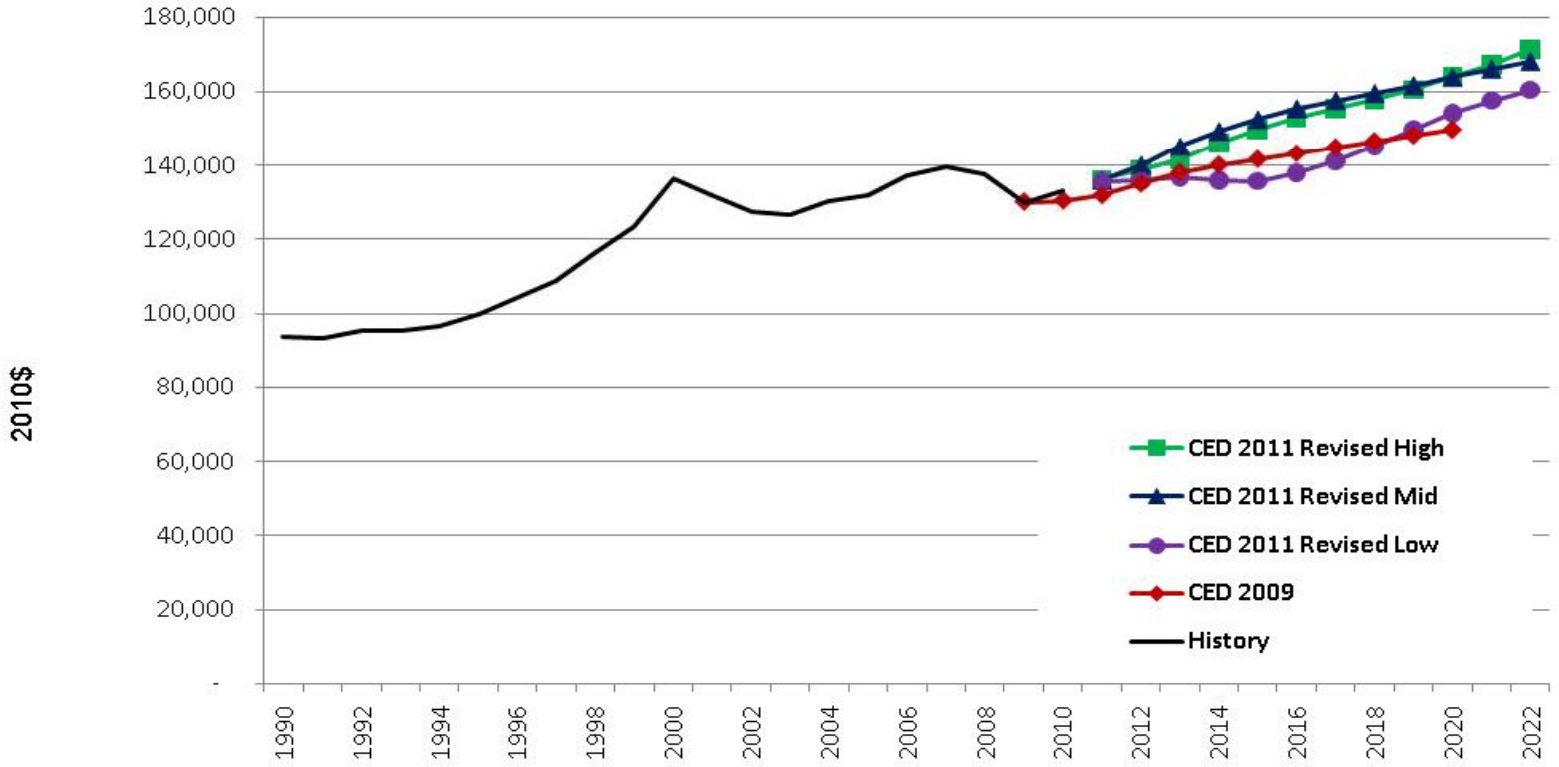
Key Input: Household Population

Slower growth 2011-2020 in CED 2011 vs. CED 2009



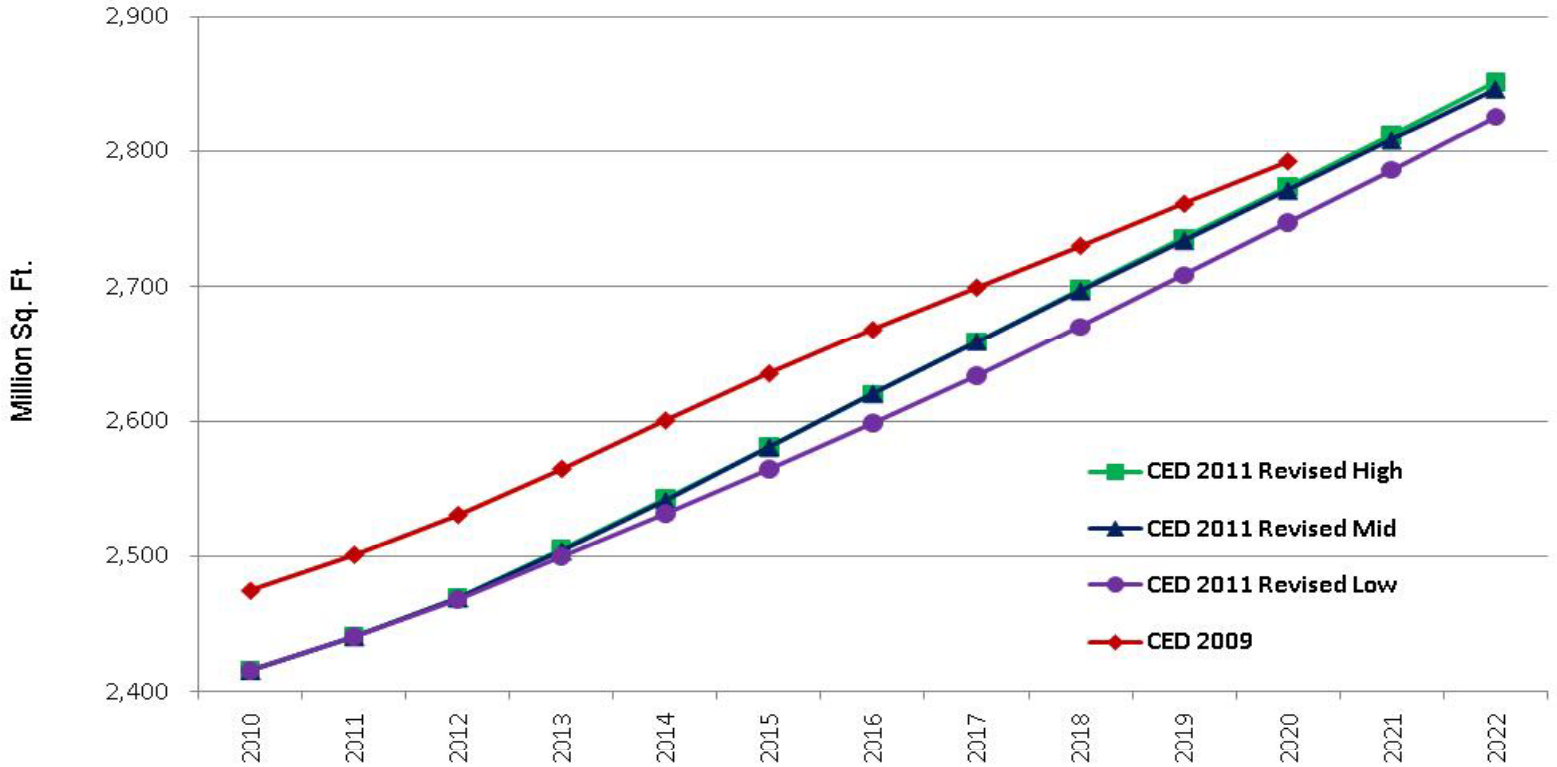
Key Input: Income per Household

Faster growth in mid and high cases vs. CED 2009



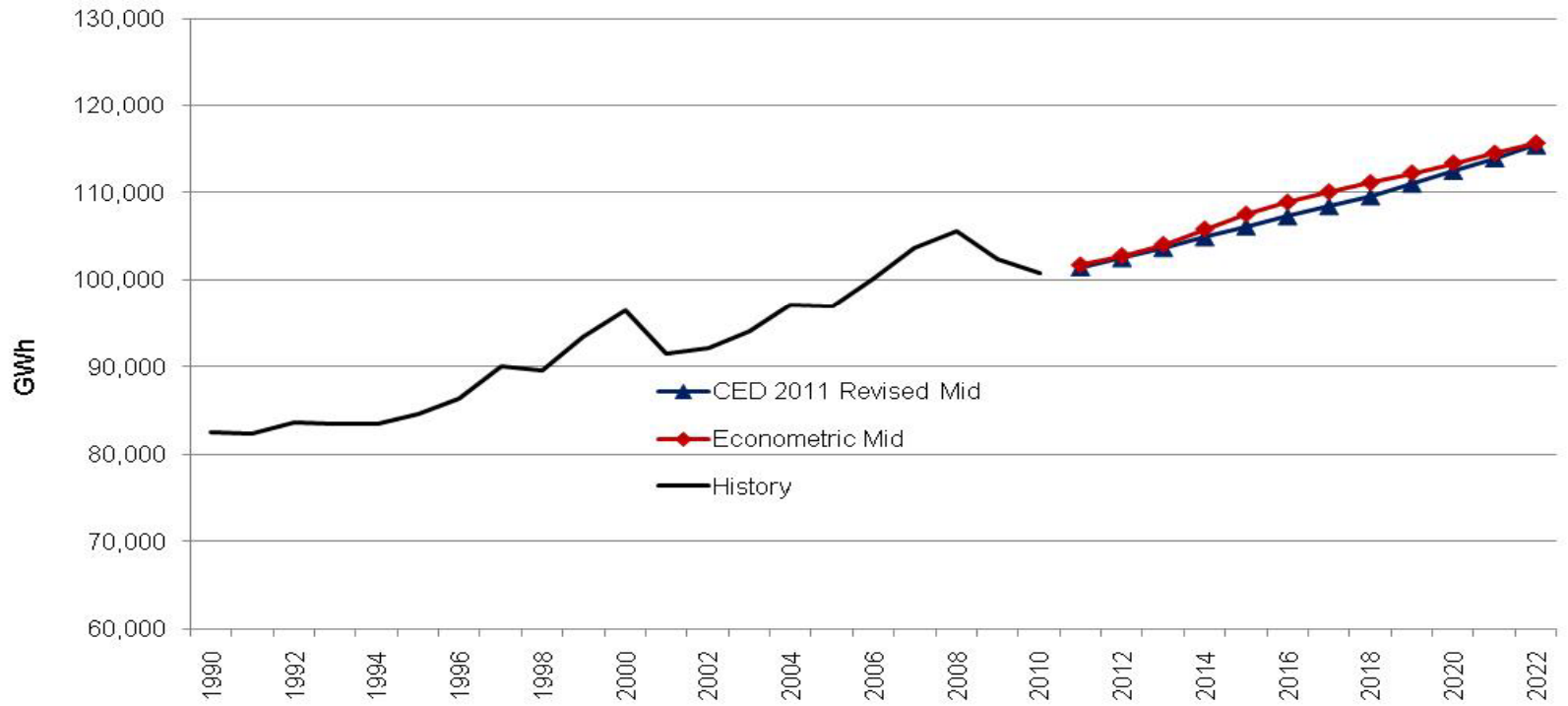
Key Input: Commercial Floorspace

Lower starting point, faster growth vs. CED 2009



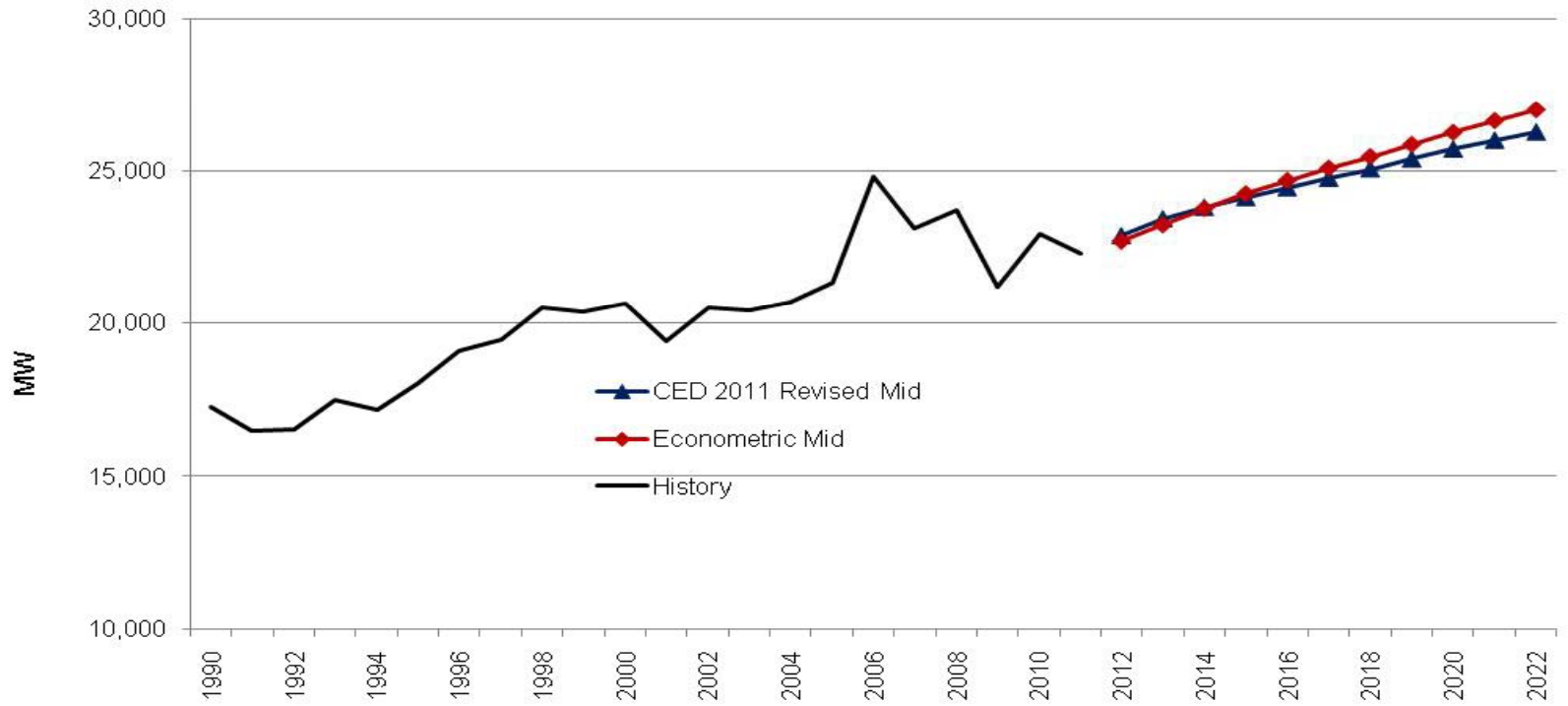
PG&E Electricity Sales: CED 2011 Revised vs. Econometric Forecast (Mid Case)

Econometric 0.15% higher in 2022



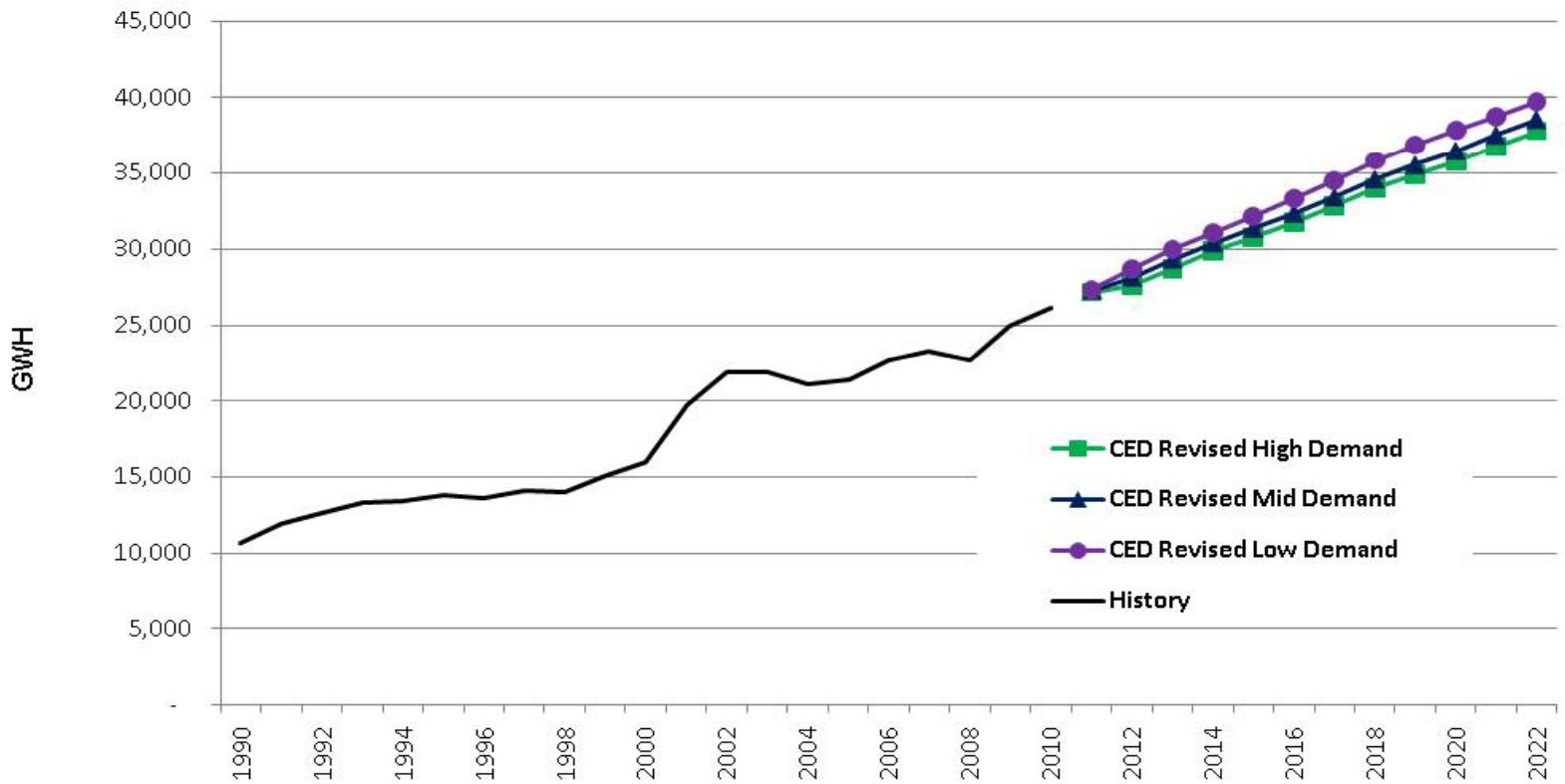
PG&E Peak Demand: CED 2011 Revised vs. Econometric Forecast (Mid Case)

Econometric 2.7% higher in 2022



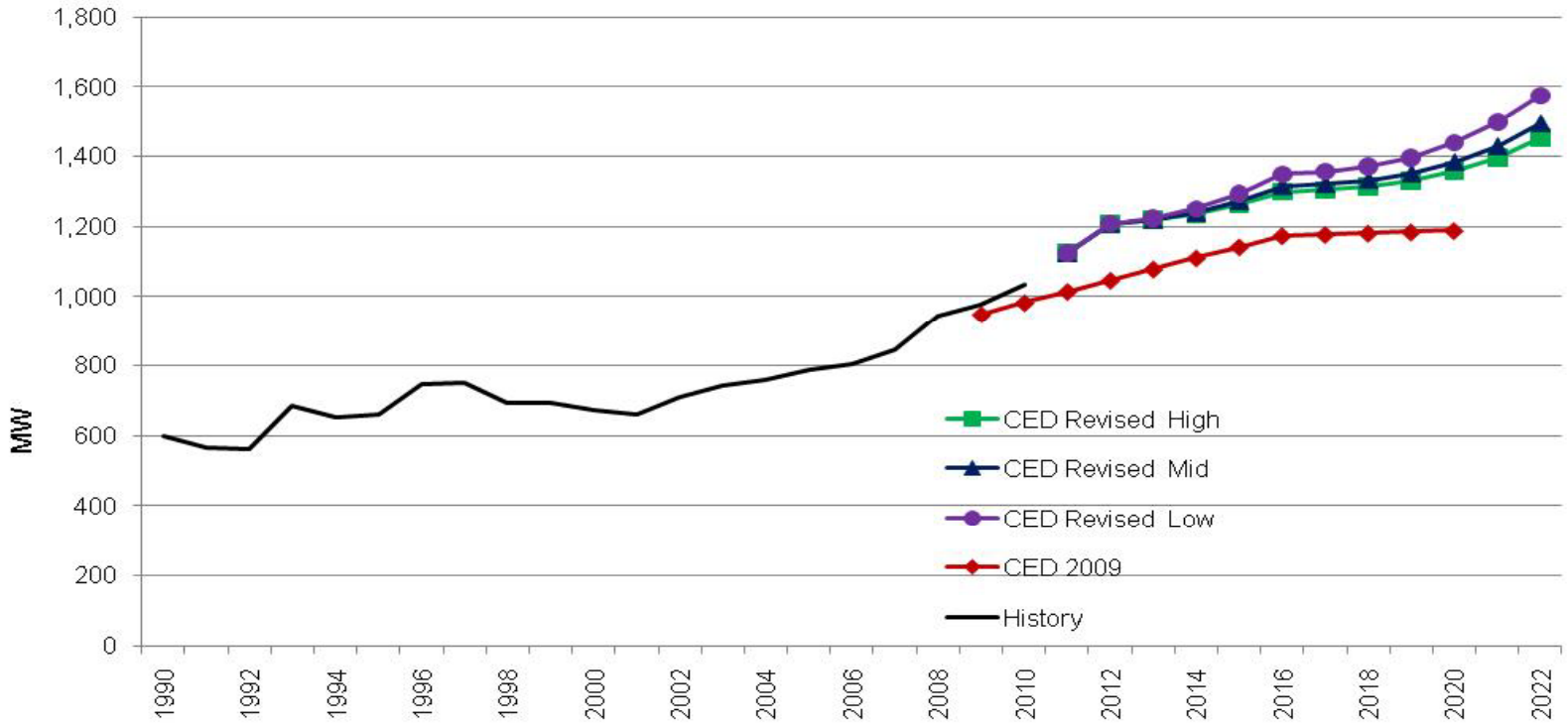
PG&E Efficiency Impacts

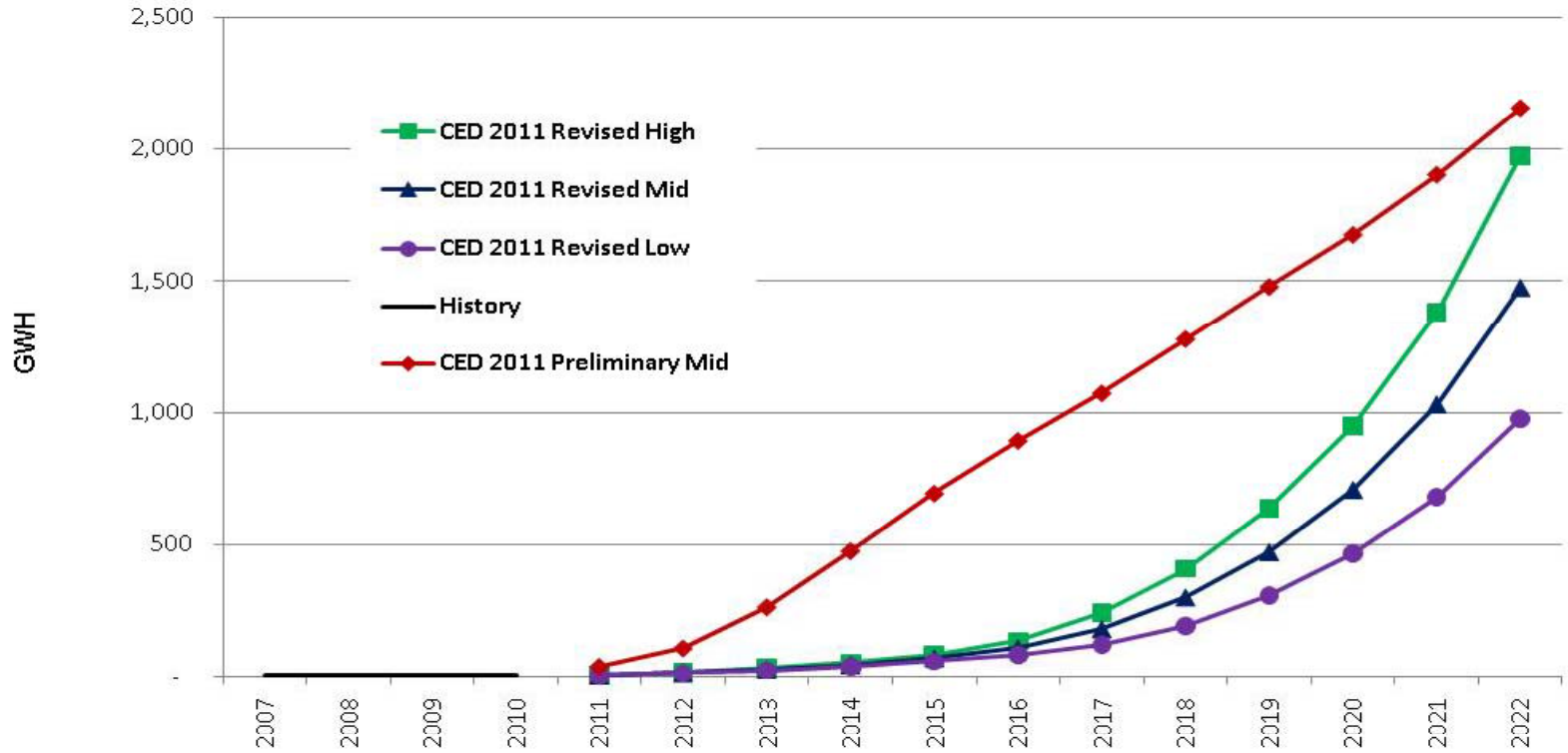
10.5-12.5 k additional GWh savings 2011-2022



PG&E Self-Generation Peak Impacts

PV Peak impacts increase by 300-400 MW 2011-2022



PG&E Electric Vehicles

700 GWh lower in mid case compared to preliminary forecast mid case