



# Assembly Committee on Utilities and Energy

Assemblymember Chris R. Holden, Chair

California Legislature

## Electricity Prices Matter

There exists a growing nexus between the affordability of electricity and California's ability to electrify sectors with a high greenhouse gas (GHG) emissions profile. A recent report by the Legislative Analyst's Office (LAO) cautions, high electricity prices could be a barrier to future emission reductions and California's rates are significantly higher than most other states.<sup>1</sup> California's average prices of electricity are among the highest in the nation.<sup>2</sup> Rates vary among load-serving entities (LSE): investor-owned utilities (IOU), municipal utilities, community choice aggregators (CCAs) and energy service providers (ESPs).

Between 2008 and 2018, collectively the IOUs rate base doubled in size from \$29.3 billion to \$59.3 billion. This amount equates to a 102% increase in nominal dollars over the past decade, triggering corresponding increases in general rate case revenue requirements (Figure 1 below).<sup>3</sup> Approximately 55% of the utilities' electric revenue requirements are set in general rate cases (GRC) at the California Public Utilities Commission (CPUC) and the Federal Energy Regulatory Commission (FERC) sets the revenue requirement for transmission assets. The remaining 45% consists of pass-through of the costs of power procurement, Department of Water Resources' power charges, nuclear decommissioning trusts, public purpose programs, fees, and regulatory expenses approved by the CPUC.

**Retail electricity rates are substantially higher** due to a variety of factors, including 1) utilities recovering fixed costs through volumetric rates, thereby increasing per kWh rates paid by customers; 2) declining electricity consumption (which means fixed costs are spread over a smaller base); and 3) costs for various state-mandated programs are embedded in electricity rates.<sup>4</sup>

Rates that are much higher than the marginal costs have adverse economic effects because they discourage valuable economic activities that might have otherwise occurred. For example, high rates might make it more expensive for a business to produce valuable goods and households might avoid setting the home thermostat to a comfortable temperature. Additionally, high electricity rates discourage adoption of some

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<sup>1</sup> Assessing California's Climate Policies – Electricity Generation: LAO January 2020, Pg. 24.

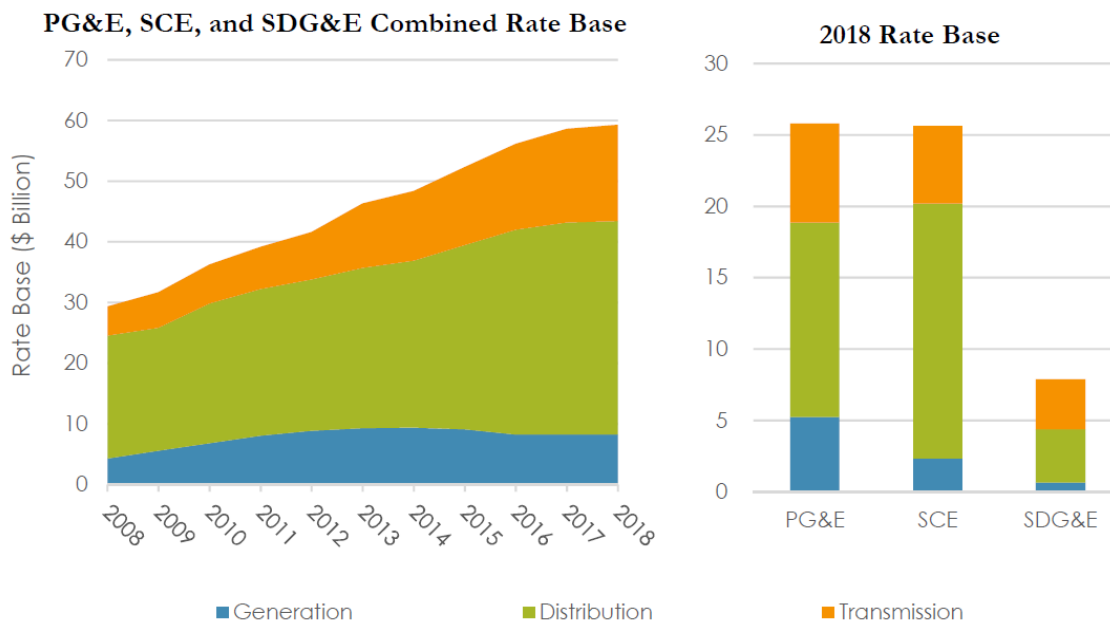
<sup>2</sup> Electric Power Monthly with Data for November 2019, U.S. Energy Administration, January 2020, Chart 5.6.A.

<sup>3</sup> California Electric and Gas Utility Cost Report: AB 67, Annual Report to the Governor and Legislature, April 2019, Pg. 10.

<sup>4</sup> Assessing California's Climate Policies – Electricity Generation: LAO January 2020, Pg. 2.

technologies such as electric vehicles and electric appliances, which could be used to substantially reduce statewide GHGs.<sup>5</sup> Although high electricity rates might encourage some emission reduction in the electricity sector through reduced consumption and greater efficiency, they serve as a barrier to GHG reductions in other sectors.

Figure 1: Trends in Electric Utility Rate Base



**Overview of Rate Components (Figure 2)<sup>6</sup>**

**Distribution Revenue Requirement:** Since 2008, the total distribution revenue requirement has increased, from \$6.98 billion to \$10.67 billion. Over the same period, depreciation expenses have experienced the greatest increase, with an approximate 5.0% average annual growth rate. The increases in distribution costs are primarily due to capital additions and ongoing infrastructure modernization and improvements to the distribution system, which have increased the rate base.<sup>7</sup>

**Utility Owned Generation:** In 2018, purchased power accounted for 68% of the total generation revenue requirement, while utility-owned generation comprised about 32%. Power purchase costs represent the largest component of forecasted generation costs and account for 31% of total revenue requirements. Recovery of these pass-through costs

<sup>5</sup> Assessing California’s Climate Policies – Electricity Generation: LAO January 2020, Pg. 2.

<sup>6</sup> California Electric and Gas Utility Cost Report: AB 67, Annual Report to the Governor and Legislature, April 2019, Pg. 7.

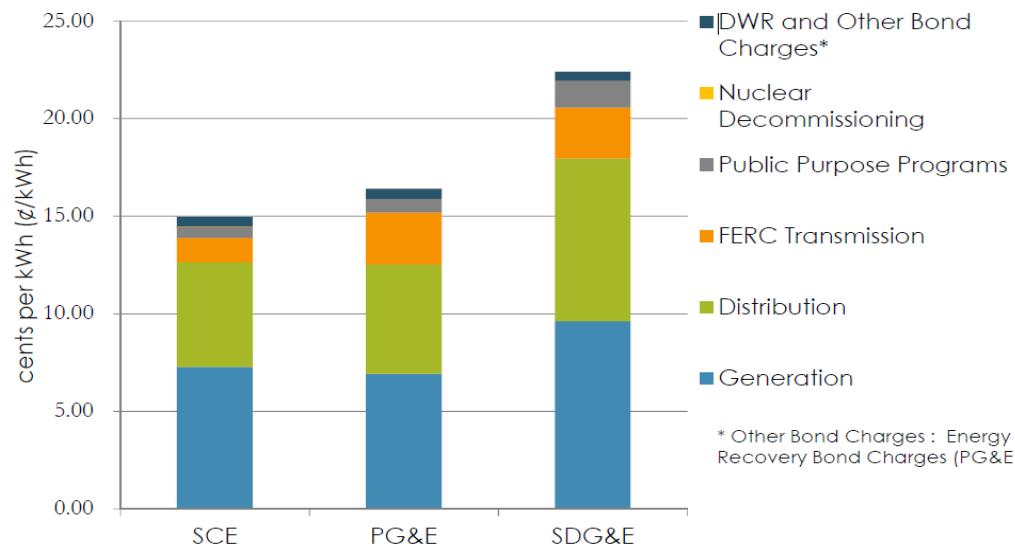
<sup>7</sup> California Electric and Gas Utility Cost Report: AB 67, Annual Report to the Governor and Legislature, April 2019, Pg. 14.

is authorized through the Energy Resource Recovery Account (ERRA) proceedings. There is no markup or profit for the utilities on purchased power expenses.

**Transmission Revenue Requirement:** The transmission revenue requirements for the IOUs have been trending sharply up since 2008, increasing at an average rate for Pacific Gas and Electric of 9.33% annually; Southern California Edison at 17.99% and San Diego Gas & Electric at 17.02%. In the past years, reasons for these increases have included California Independent System Operator (CAISO) reliability and RPS mandates, such as replacing and modernizing the transmission infrastructure interconnecting new electric generation to the grid, and compliance with national reliability standards. In 2018, the three IOUs reported that from 2007 to 2017, these self-approved projects accounted for just under 35% of their collective transmission capital additions. However, the IOUs forecast that from 2018 to 2022, these unreviewed projects will account for nearly 52% of their capital project costs.<sup>8</sup>

**Incremental Increases:** Electricity rates incorporate the cost of some programs and activities that are not directly attributable to the production and distribution of electricity. These costs are generally booked in the category of public purpose programs. For example, cost associated with the procurement and installation of vehicle charging stations are not associated with either the production or delivery of electricity, yet statutes allow the investor-owned utilities (IOUs) to seek recovery from electric ratepayers. Another example is that electric ratepayers within the IOUs service territory assume the cost of scientific and technological research as established by the Electric Program Investment Charge (EPIC).

Figure 2: 2018 Electric Rate Components



<sup>8</sup> California Electric and Gas Utility Cost Report: AB 67, Annual Report to the Governor and Legislature, April 2019, Pg. 22.

**Municipal Utility Rates and Bills: 2008-2018:** According to the California Municipal Utilities Association, from 2008 to 2018, residential California public-owned utilities (POUs) rates increased by 27%, while the national POU rate increase was only 16%. The difference in commercial rates was even slightly higher in California. Commercial rates increased 28% during that time period, while they climbed only 15% nationally. In terms of dollars, based on average household usage of 557 kWh per month (CPUC estimate: actual use varies by region), a residential bill in California increased from \$62 in 2008 to \$92 in 2018. It's well-known that due to energy efficiency efforts in California energy consumption in the state is among the lowest nationwide; however, had Californians been paying the average national POU rate, their bill would have been around \$55 in 2008, increasing to only just over \$65 in 2018. California's rates – and bills – are higher, and increasing at a faster pace than the national average.

The rate increases can be attributed to factors such as legislative mandates, the drive to procure new resources and the growth of the Transmission Access Charge for POUs in the California Independent System Operator balancing authority, of which there are about 20. Despite the POU rate increases during the 2008-2018 period, California POU rates are still on average lower than California IOU rates.

### **Electrification: The Gateway to Decarbonize**

The evolution of the energy sector is already well on its way. Declining prices of renewables are providing the means to decarbonize the electric sector and, correspondingly, sectors with a much higher emissions profile such as transportation and residential. Electrification is the key driver in achieving California's GHG reduction and climate goals.

Over the last decade, the electricity sector, which is approximately 15% of California's total emissions, has been the primary driver of statewide greenhouse gas (GHG) emission reductions. Annual emissions from the electricity sector have declined by about 40 million metric tons (40%) over this period. Reductions have mostly been due to a change in the mix of resources used to generate electricity—primarily large increases in renewables (solar and wind) serving load that was once served by thermal resources. Electrification of other sectors such as transportation is key to meeting California's climate reduction goals.

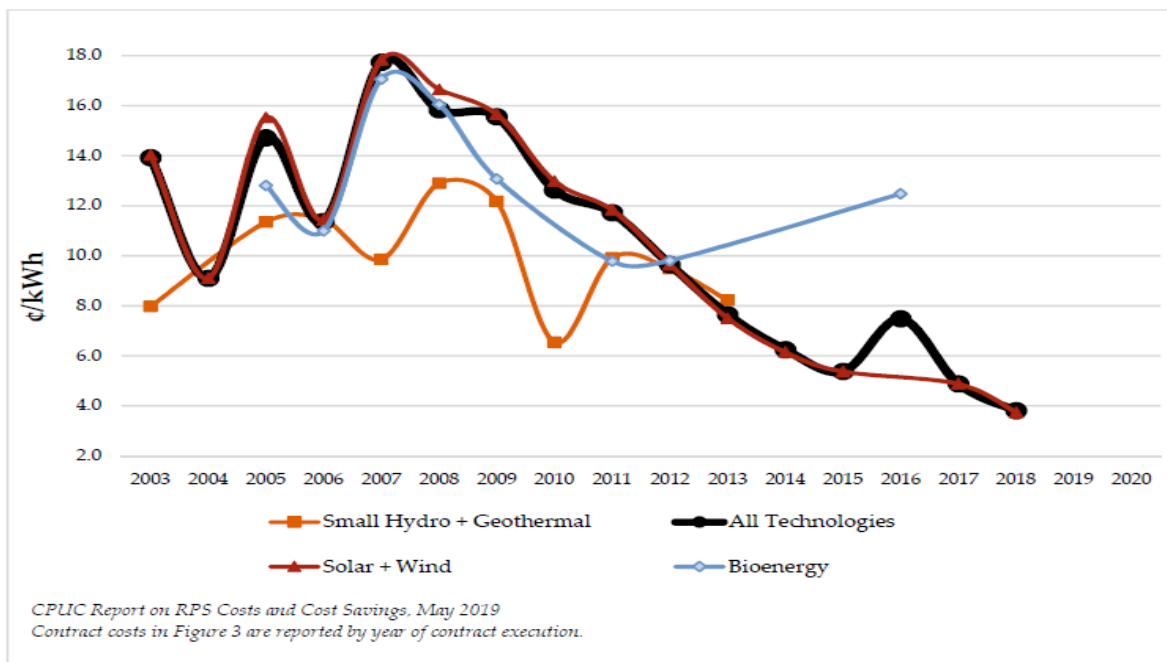
**Reduction in the cost of renewables:** California is on course to comply with the provisions of SB 100 (De León, Chapter 312, Statutes of 2018), which established interim renewable portfolio standard (RPS) targets of 44% by December 31, 2024, 52% by December 31, 2027, and 60% by 2030. The provisions of the statute further create the policy to meet all of the state's retail electricity supply with a mix of RPS-eligible and zero-carbon resources by December 31, 2045, for a total of 100% clean energy.

As required by statute, the California Public Utilities Commission (CPUC) examined prices for contracts executed in 2018 by all Load Serving Entities (LSEs). LSEs include

investor-owned utilities (IOUs), community choice aggregators (CCAs), and energy service providers (ESPs). The CPUC also reviewed RPS contracts executed by the IOUs between 2003 and 2017 to show historic contract cost trends. Figure 3 shows that RPS contract prices, in real dollars, consistently dropped between 2007 and 2018 for the all technologies group.<sup>9</sup>

The annual contract price for all technologies decreased an average of 11.5% during that time. The downward trend in contract prices can be attributed to falling prices for wind and solar technologies, which together make up 83.2% of the large IOUs' collective RPS generating capacity. However, this declining renewable price could be at least partially offset by costly integration investments. The average for all technologies contract price spiked in 2016 because of mandated biomass procurement.<sup>10</sup>

Figure 3: Historical Trend RPS Contract Costs by Technology & Year of Execution from 2005-2020 (Real Dollars)



**Increasing electricity prices pose two formidable challenges for the state’s ambitious climate change policies<sup>11</sup>:**

- First, with increasing amounts of renewable electricity, the electrification of transportation and buildings could offer the most cost-effective path to deep decarbonization. However, high electricity prices could also slow transitions

<sup>9</sup> 2019 Padilla Report: Costs and Cost Savings for the RPS Program (Public Utilities Code 913.3, Pg. 7).

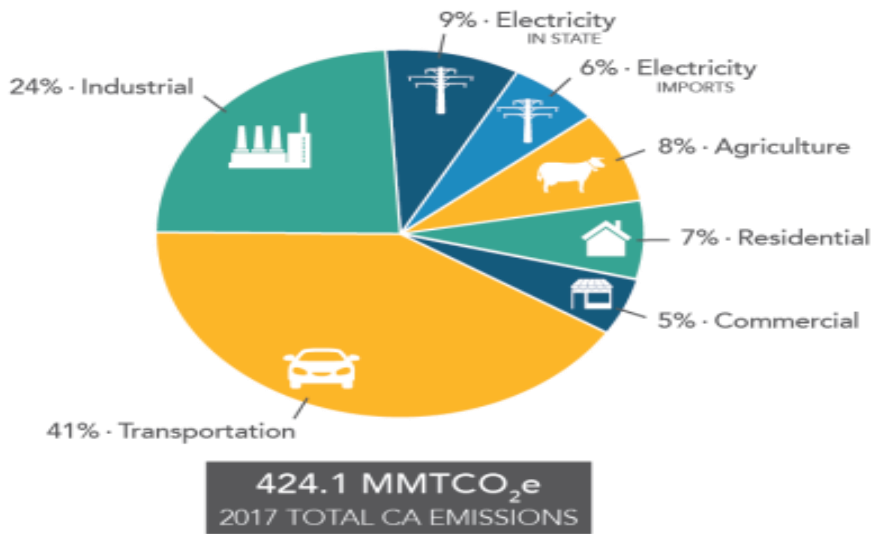
<sup>10</sup> 2019 Padilla Report: Costs and Cost Savings for the RPS Program (Public Utilities Code 913.3, Pg. 7).

<sup>11</sup> 2019 Annual Report of the Independent Emission Market Advisory Committee, December 11, 2019.

away from gasoline, diesel and natural gas if the cost to power electrical alternatives becomes prohibitive.

- Second, the palatability and durability of climate change policies depend in part on how the cost burdens of reducing greenhouse gases are shared among households and firms. If the costs result in higher electricity prices, this could impose an increasing economic burden on ratepayers and risk undermining support for California’s climate program.

### Emissions by Economic Sector: California Air Resources Board



### Electrification is Fundamental in Achieving California’s Climate Goals

The Independent Emissions Market Advisory Committee Annual Report of 2019

*“Policymakers should be wary of recovering escalating costs of climate change mitigation and adaptation in electricity rates. For example, if the cost of wildfire damages and mitigation is entirely borne by electricity ratepayers, electricity rates will rise at the same time that other policies – e.g., storage mandates, integrating higher and higher levels of renewable resources onto the grid -- may increase rates. Burdening electricity prices with costs that are not going-forward expenses of supplying electricity is a form of taxation. It is essentially a sales tax on electricity consumption that discourages efficient substitution from other energy sources to electricity and, if poorly designed, disproportionately affects low-income households. Moving costs that are unrelated to the going-forward expenses of supplying electricity to a broader base could offer the opportunity to better address affordability concerns and help support efficient transitions away from petroleum and natural gas.”<sup>12</sup>*

<sup>12</sup> Independent Emissions Market Advisory Committee Annual Report – 2019, Pg. 11.