

A CONVERSATION ON CALIFORNIA'S CLEAN ENERGY FUTURE

Generating Cleaner Power for California

BY TONY EARLEY, CHAIRMAN & CEO, PG&E CORPORATION

CLIMATE CHANGE EXPERTS AGREE THAT TO curb greenhouse gas emissions that contribute to global warming, the world eventually must wean itself off of fossil fuels. The answer to the question of how to do that is where the debate begins.

One thing's for sure: just as we have all contributed to creating the problem, we must all be part of the solution. Here in California, electric power production contributes just over 20 percent of the state's greenhouse gas emissions. Another 37 percent of carbon emissions come from transportation and the rest comes from industry and other smaller sources.

That's changing for the better—and fast. Working closely with independent developers, California's utilities have made huge strides in finding new sources of clean energy. A quarter of the state's electricity now comes from renewable sources, and California is on track to hit its 33 percent renewables target just five years from now, in 2020. Last year it produced more electricity from large-scale solar projects than all other states combined.

We at Pacific Gas and Electric Company are proud to help California set the pace. PG&E developed the first commercial geothermal power in the United States, in Sonoma County, and our purchases have been pivotal to the development of California's wind industry. Last year, wind accounted for about 7 percent of all of our electricity sales, and geothermal made up another 5 percent. In solar energy, the Solar Electric Power Association has recognized us as the national leader for seven years running.



California is on track to hit its goal of having 33% of the state's energy come from renewable energy sources by 2020.

Renewables have helped PG&E generate or procure more than 55 percent of our electricity from sources free of greenhouse gas emissions in 2014.

Given the scale of the challenge we face, such accomplishments are only a down payment. PG&E and the state's other utilities will have to keep investing to produce even cleaner energy in the years to come. That won't be cheap—our

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renewable energy purchases have cost billions of dollars in the past decade—nor will it be easy.

Managing the sometimes unpredictable fluctuations of wind and solar power to ensure that supply and demand remain in balance on the elec-

trical grid at all times is a major technical challenge. Sunny Hawaii, for example, has struggled to integrate the sharp daytime generation spikes flowing from rooftop panels, and then flip back to fossil fuel sources at night. It is a credit to PG&E's engineers that we've come this far, but we need to move ahead with care.

As three of the state's top energy regulators stated in a recent newspaper commentary, California must make sure that our investments in reducing greenhouse gas

emissions also improve reliability and keep costs down. "More of the same policies," they added, pointedly, "will not do the trick."

We couldn't agree more. Making further progress on clean energy—while keeping electric service reliable and affordable—will require constant innovation. That will in turn require giving utilities—like other sectors of the state's economy—the flexibility to innovate and meet new targets as cost-effectively as possible. In shrinking California's carbon footprint, speeding the integration of renewables need not be our only tool. Reducing demand for energy by doubling the efficiency of the system may prove just as viable.

After all, here in the Golden State, we can say with confidence that government, the power industry, and consumers are taking aim at the same shared goal. A regulatory framework that allows all the key players to pursue multiple paths to success will greatly improve the odds for achieving the greener future in which we all want to live.

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