

Don't Miss The Great Solar Debate: Where Does the Global Solar Industry Stand? [Click Here to Register!](#)

Despite Fears, New Renewables Are Not Bankrupting California

Susan Kraemer, Correspondent

May 22, 2013 | 0 Comments

Until recently, the potential rate impact of all the new contracts for renewable energy being added to meet California's Renewable Portfolio Standard since 2006 has been a matter of some concern. According to the Division of Ratepayer Advocates in early 2012, an estimated \$20.8 billion will have been spent in California on contracts for new renewable generation by 2020, and the rate impact was a big unknown.



HydroVision
BRASIL

REGISTER TODAY!

24-26 September 2013 | Transamerica Expo Center | São Paulo, Brasil | www.hydrovisionbrasil.com

But last month PG&E chief executive officer Anthony Earley estimated that the first of these new contracts now delivering renewable power to the grid will likely add only 1 percent to 1.5 percent to PG&E ratepayers' household bills. This is a startlingly low impact. With the average California household paying \$100 a month, another dollar or so is a fairly negligible addition; the sort of variation in bills that is really just noise.

The estimate is also surprising from a technical point of view. Renewables like solar and wind represent a relatively new technology at utility scale, and haven't had the decades of persistent government support to back them the way that traditional energy had. Throughout the 1980s and '90s, the Department of Energy led R&D into fracking, which has led to the current glut in natural gas recoveries, and federal legislation has long allowed pass-through investment in fossil energy through favorable tax treatment via Master Limited Partnerships.

So for new technologies that have only recently operated at commercial scale, a rate impact of just 1 percent seems very low.

"What Tony said is correct," said PG&E's Denny Boyles. "We've forecast all along that adding the renewables to our portfolio would increase rates by 1 percent to 2 percent a year through 2020. There'd likely be some years where as different projects come online there'd be some lower, some higher, but we are still confident we'll still fall within that rate."

Experience Bred Confidence

To some extent, PG&E's comfort level is due to California's relative familiarity with early renewable energy. Altamont Pass began generating the first utility scale wind power in the U.S. in the eighties, as did the first solar thermal Solar Energy Generating System (SEGS), and PG&E spearheaded the development of geothermal energy in the '60s with the Geysers.

The state's Renewable Portfolio Standard (RPS) has the highest renewable energy requirements in the nation, aiming for 33 percent by 2020 and California now has 20 percent (non-hydro) renewables on the grid.

The 1 percent increase that PG&E expects is at the very low end of what utilities expect nationwide in estimating what renewables will add to the cost of electricity, according to the [Black & Veatch 2013 US Electric Utility Report](#).

The other utilities surveyed in that report were much less sanguine about the cost of new renewables, with expected price rises due to renewable energy ranging from "below 5 percent" to 10 percent." Some utilities even expected that renewables were unaffordable, and that they would be unable to meet a RPS if forced to. The most trepidation was registered by the utilities in the Southeast, which tend to have the most coal-fired power on the grid and little or no RPS legislation.

"Every utility faces different circumstances," says PG&E rates guru Jonathan Marshall. "California enjoys very good solar resources, compared to some states. Others may have huge wind resources and so on that are advantageous. But every state and geographic area is going to have a different mix and thus a different likely cost structure," Marshall says. He believes that California is ahead of the game rate-wise because it got such an early start in renewable energy technology. "So we are benefitting from the increased learning that has gone on, which was one of the main purposes of California's aggressive program to help jumpstart this industry," he says.

Marshall sees a possible advantage for states getting onto the game later; that they can benefit from lower costs as technologies mature.

California's Experience with Renewables

“California is unique in that there was strong legislative support for the RPS and a simultaneous awareness of that impact to rates,” adds Boyles. “So as projects went out to bid, that was always the consideration.”

Of the three big IOUs in California required to meet the RPS, the one with the longest experience with renewables is Southern California Edison, which has had renewable power in its portfolio for twenty years.

SCE has contracted for several solar projects at below the Market Price Referent (MPR), which is the estimated cost of electricity from a 500-MW combined-cycle natural gas plant.

Marc Ulrich, VP of Trading and Energy Operations at renewable pioneer SCE, agrees that their new renewables have been below MPR.

“Yes, in fact there’s a report that gets published, that Senator Padilla from the state legislature put in place, that shows that new deals for SCE, SDG&E and PG&E have been more cost effective than the MPR,” Ulrich tells Renewable Energy World. But he cautions that the MPR is “just a spreadsheet model of somebody guessing what a gas price from a natural gas power plant would cost” and that this is not necessarily “what the market actually does when buyers and sellers actually get together.”

Additional Fixed Costs in Fossil Contracts

Comparing contracts for gas with solar or wind is almost impossible, according to Ulrich. The typical power purchase contract (PPA) for gas is only for 10 years, not the 20 or 25 years typical for a wind or solar project. Gas prices don’t account for their long term greenhouse gas impacts, and solar PPA prices don’t account for their recent subsidies under the Obama administration.

And to make cost comparisons even more complicated, power purchase contracts for gas are seldom just for power produced, as they are for wind or solar.

Traditionally gas PPAs have also included a monthly fixed payment of some sort in addition to the energy price. This additional fixed cost was to keep the power plant in business by paying the avoided cost of building another one.

“The commission, when they set “avoided cost” in the past, set it at an estimate of what we would be paying for other power plants,” Ulrich explains. “There was a fixed payment to keep the power plant around, and then a variable payment for when the power plant operated, to cover its fuel cost, for example.”

He cites some recent natural gas contracts that SCE executed over three years starting in 2006. “They have both a fixed and a variable payment and that’s because a power plant has both fixed and variable costs to it,” he says.

But the fixed payments monthly are a hidden cost. “If somebody says gas is, say 8 cents, you should ask is that an all-in energy payment? Or are there also some fixed payments you pay above and beyond the 8 cents?”

New Renewable Contracts are Energy Only

By contrast, the new contracts for renewables do not include a payment for fixed costs, like gas plants. “The renewable PPAs we signed are 20 year contracts and they are almost all variable,” he calculates. Ratepayers pay only for the actual energy produced from renewable projects, not their fixed costs.

An exception to the “energy production only” variable payment for renewables is the SEGS solar thermal projects built by Luz in the 1980s, which SCE owned initially, and later sold, to buy back the power in PPAs. Like the traditional power plants of the time, the old SEGS plants’ contracts included both a fixed and a variable cost.

Ulrich could not locate the fixed cost that SCE now pays for SEGS, but he locates the current rate for energy production from SEGS in May. It is just 5.57 cents a kilowatt hour, which he rounds up to 6 cents.

Like traditional power plants, the new renewable power plants coming online will not always be brand new. Older plants have paid off their loans for construction, so simple seniority is another reason why it is hard to compare traditional and renewable power prices.

But SEGS offers one indication of the low rates an older renewable plant can profitably sell energy for once these capital costs have been captured. California's future energy costs don't look too alarming.

Join the community!
Receive FREE
e-Newsletters,
blog and comment.

**RENEWABLE
ENERGY.**
WORLD.COM | The World's #1
Renewable Energy
Website

0 COMMENTS

REGISTER TO COMMENT

Add Your Comments

To add your comments you must sign-in or create a free account.

Create a Free Account!

Sign-In

Susan Kraemer

Susan Kraemer reports on renewable energy for CSP Today, Wind Energy Update, PV Insider and