Commonwealth Club panel:

by Debra Vogler, senior technical editor, Photovoltaics World

January 22, 2010 - An evening panel discussion at a Commonwealth Club event on scaling solar power in California (1/12/10, San Francisco, CA) sought to find answers to barriers still facing California as it strives for 20% of its electricity to come from renewable energy sources by the end of this year. Panel members included: Mike Splinter, CEO of Applied Materials; Bob Epstein, founder of Environmental Enterprises; Mike Peevey, chair of the California Public Utilities Commission; Nancy McFadden, SVP of utility PG&E; and moderator Gregory Dalton, the Commonwealth Club's VP of special projects and director of its "Climate One" project.

A major portion of the evening's discussion focused on California's goal to have 20% of its electricity coming from renewable energy sources by the end of 2010 -- a goal that will not be met, mainly due to "very frustrating" obstacles listed by Peevey as inability to get financing, inability to site for transmission, and the rigidity of government at all levels to move with speed to site projects.

However, the state will forge ahead with its next goal: having one-third of its electricity come from renewables by 2030. "We have to start with the premise that we can, but the same challenges will exist in even greater measure for meeting this goal as the previous [20%] goal," McFadden said. Currently, PG&E has about 14% of its portfolio in renewable energy and it has contracted for >20% by the end of 2010, "and certainly by the end of 2013, which is the official deadline," she told the audience. She added that there was a silver lining to the endeavor -- a commitment by the state and its leadership to address barriers and bring commonsense to the issue. "Utilities, rate payers, customers, environmental groups, and government at every level in unprecedented proportions must work together -- it's a high calling, but it is possible," she said.

Epstein -- who also is a trustree of the National Resources Defense Council (NRDC) -- noted that a major barrier to using renewables is where to site their generation: "Everyone has their favorite spot of land where they do not want to put solar." He suggested three different ways to meet California's 33% goal: 10 million rooftops; 10,000 distributed solar; or 150 central plants. The big questions, he told the audience, are which ones can be permitted and who's willing to give up their land to use it for different things. "We do not have a technology barrier, but we have more institutional barriers than I ever realized when I first got into this 10 years ago."

Peevey added that the state will need a combination of rooftop and distributed solar to meet its goals. The California PUC has approved a program for Southern California Edison to put in 500MW of rooftop solar -- all of it on commercial rooftops. PG&E has also applied for a similar program that will soon be coming up for a decision before the PUC. He added that the California

Solar Initiative, passed by the state legislature, has committed to 3000MW of rooftop solar, largely residential by 2017. "And large central stations, such as those considered for the Mohave Desert, are cheaper by and large and show great promise -- and will probably be the biggest single share of solar in California by 2015 or 2020," Peevey added. The project would add thousands of MWs if the permitting can get done and adequate transmission built.

Agreeing with Peevey, McFadden said that there is no single renewable technology -- even within solar -- that will be the solution; it has to be a combination. "Approximately 60% of PG&E's renewables under contract are solar," he said, and "a large part of that is devoted to solar thermal contracts, but about 30% is solar PV and smaller projects. If we put all our dibs on one [technology], we could end up losers."

Panelists were asked how they would change policy themselves and get progress moving forward with greater speed. Epstein said he would define the rules for a successful project, set up standards and one lead agency, and put in place a bonus plan (for everyone in that lead agency) based on achieving objectives. But playing devils advocate, he also observed that laws that govern such projects are designed to ensure that they go as slow as possible, "to make sure a bad project doesn't get done ...if someone were to put a power plant in your neighborhood, you would appreciate the fact that you have time to try and fight it." Thus if society suddenly decides that time matters on (renewable energy) projects, it needs to be very careful on defining such projects and how fast they can move, he noted.

For Applied Materials' Splinter the key would be price certainty, because that is what allows companies and banks to make money in developing solar projects. "It's not that financing isn't available today, it's that financing isn't available for projects that lose money," he said. He believes that if there is price certainty at a level that can be defined over time as the cost of solar comes down, private developers will take over and it will grow exponentially, "and that is how we will make the 33% goal." He added that the state needs to have bureaucracy come down, appoint a "czar," and put in place a way for banks and developers to make money. "It's not a technology breakthough, it's not like the Manhattan project -- it's much more like the Marshall Plan," he said.

Putting a meaningful price on carbon would also help, according to Peevey and Splinter. "It would change the cost of fossil fuel-generated electricity and depending on what the form of fuel is, it would make things much more competitive," said Splinter. And Peevey noted that long-term, under cap-and-trade programs or cap-and-dividend programs, efficiencies would be wrung out of renewable energy sources and it would stimulate more renewable energy.

Job growth was also covered by the panelists. Splinter noted that solar panel manufacturers are permanent jobs, and ultimately as the state strives to meet its renewables goals these factories would be deployed throughout the state. "This is an incredible opportunity for California to develop a new industry -- not just in R&D, but also in manufacturing jobs," he observed.

Peevey added that aside from the value of having IP, R&D, and manufacturing jobs, renewables

projects involve a tremendous amount of construction and maintenance. "We're just getting a foretaste of what we can achieve if we go all out in the next few years," he said.

Epstein pointed to research done at UC Berkeley, in which it was calculated that for every $1 that consumers spend on electricity generated by fossil fuels that instead could get diverted into the local economy, there is a 50× benefit in terms of jobs. "If you take the government's forecast for energy prices and compare that to a 33% renewable [energy goal], the difference is about 700,000 jobs, most in the local economy," said Epstein. "And that's separate from manufacturing jobs." By contrast, he observed, natural gas from Canada is expensive and doesn't create many jobs. "When you take renewables, you are eliminating the fuel costs and trading it for local labor," he said. "In many cases, we believe electricity prices will be $100 cheaper under the 33% goal, and that extra $100 can be spent in the local economy." So the benefit is clear -- quit sending money to fossil fuel sources and instead, keep the dollars in local economies in addition to creating the manufacturing jobs required for renewables.