Much of our efforts to reduce carbon emissions involves fairly complicated and advanced technologies. Whether it's solar panels, batteries, flywheels, or fuel cells, these technologies have typically required public support to bring them to scale at a reasonable price, along with significant regulatory or legal reforms to accommodate these new ways of doing old things, from generating power to driving a car.

Yet ironically, here in California we seem to be making the most progress on some of these more technologically advanced areas, and not enough progress in one of the simplest and most cost-effective means of reducing carbon emissions: using less energy in our existing buildings.

Being more energy efficient certainly can involve technological advances, like LED lights instead of incandescent bulbs, lights with sensors that turn off when people leave a room, or more efficient heating or air conditioning units. But it is fundamentally about doing the same with less, and it can often pretty quickly pay off, given the reduction in utility bills that result.

But in California, despite billions spent on energy efficiency efforts, our energy efficiency efforts are barely keeping pace with the increasing demand for electricity. Current utility efficiency programs focus on voluntary, often self-financed measures, with rebates and fixed incentives meant to spur them on. Meanwhile, administrator costs are taking up half of the budgets for many efficiency programs.

Clearly, something needs to change if we are to have any hope of achieving our long-term climate and energy goals in the state. After all, it's a waste to focus on expensive new renewables and energy storage if we're not making better progress on the efficient use of the energy we already have.

Given this challenge, the state legislature recently acted to change the nature of our efficiency programs. SB 350 (De Leon, 2015) requires a doubling of efficiency in our buildings by 2030, while AB 802 (Williams, 2015) in part requires utilities to plan for efficiency programs that compensate building owners based on the measured energy saved. These steps will be necessary to change the paradigm and unlock more private investment in energy efficiency retrofits.

To recommend policies to boost this capital market financing for energy retrofits, UC Berkeley and UCLA Law are today releasing a new report "Powering the Savings: How California Can Tap the Energy Efficiency Potential in Existing Commercial

Buildings." The report is the 17th in the two law schools' Climate Change and Business Research Initiative, generously supported by Bank of America since 2009.

The report describes ways that California could unlock more private investment in energy efficiency retrofits, particularly in commercial buildings. This financing will flow if there's a predictable, long-term, measured and verified amount of savings that can be directly traced to energy efficiency measures. New software and methodologies can now more accurately perform this task. They establish a building's energy performance baseline, calibrating for a variety of factors, such as weather, building use, and occupancy changes. That calibrated or "dynamic" baseline can then form the basis for calculating the energy savings that occur due specifically to efficiency improvements.

But the state currently lacks a uniform, state-sanctioned methodology and technology standard, so utilities are reluctant to base efficiency incentives or programs without regulatory approval to use these new methods. The report therefore recommends that energy regulators encourage utilities to develop aggressive projects based on these emerging metering technologies that can ultimately inform a standard measurement process and catalyze "pay-for-performance" energy efficiency financing, with utilities able to procure energy efficiency savings just like they were a traditional generation resource.

To learn more about the report and its recommendations, please join us for a webinar on Monday, April 18th from 10 to 11am. Speakers will include:

- **Jeanne Clinton**, Special Advisor to Governor Brown for Energy Efficiency, California Public Utilities Commission
- **Cynthia Mitchell,** energy economist and TURN consultant
- **Dennis Quinn**, Chief Operating Officer and Co-Founder, Joule Assets. Inc.

You can register via this site.

Hopefully, by tapping into the state's spirit of innovation, California leaders can show the way to an energy efficiency revolution the way the state helped create a strong market for other clean technologies, like solar panels and energy storage. Because failure on the efficiency front could otherwise nullify so much of our progress in these other areas.