

ENERGY



S DEBATE CONTINUES NATIONWIDE OVER HYDRAULIC FRACTURING, OR FRACKING, and other ways to develop conventional energy sources, California's legal and policy discussion on energy takes a broader scope. The latest news is Gov. Jerry Brown's signing in early October of AB 327, which cements California's groundbreaking solar initiative, credited with jump-starting the rooftop solar industry. Other issues being watched closely here include the state's multiplicity of energy regulators and frameworks and the potential impacts of improving technology, particularly in energy storage. We caught up with Ashutosh Bhagwat, a professor at UC Davis School of Law and a board member at the California Independent System Operator; Michael Day, a partner at Goodin, MacBride, Squeri, Day & Lamprey; Christopher T. Ellison, a partner at Ellison, Schneider & Harris; David Spielberg, a partner with Orrick, Herrington & Sutcliffe; and John M. Spilman, of counsel with Cleantech Law Partners. The discussion was moderated by *California Lawyer* and reported by Balinda Dunlap of Barkley Court Reporters.

EXECUTIVE SUMMARY

MODERATOR: What are the major provisions of AB 327 and what immediate legal and market impacts do you expect?

MICHAEL DAY: The major thing that AB 327 does is remove some of the statutory restrictions placed on California Public Utility Commission approval of increases for residential utility rates—including for lower-tier rates such as baseline rates. These restrictions have tilted the rate structure in a way that's disadvantaged higher-volume users, whether they are higher-income or not. In exchange, the utilities made a bargain to extend net metering (which gives private generators, including homes with rooftop solar, credit against their utility bills for the power they produce).

AB 327 didn't eliminate the 5 percent cap (on the quantity of power generated in California that is eligible for net metering). But it does allow the net metering program to continue beyond the cap deadline by providing an alternative net metering contract program. The law also gives the utilities something they really wanted—authorization for the CPUC to adopt a fixed charge for all customers, including net metering customers. Bundled residential customers won't see a change in their bills, but net metering customers will likely see a net increase in their bills if a fixed charge is adopted.

ASHUTOSH BHAGWAT: I want to make clear that the views I am expressing today are solely mine and not necessarily those of the ISO or UC Davis. My understanding is that the monthly charge for net metering customers is capped at \$10, which I would not think would have a dramatic impact on the viability of solar.

CHRISTOPHER T. ELLISON: For the most part, the reaction of the solar industry was relief: They were facing the 5 percent cap, and removing it is crucial to their business.

MODERATOR: How significant are AB 327's changes to California's renewable portfolio standards (RPS)?

JOHN M. SPILMAN: On the question of what it means for the CPUC now to have the authority to require utilities to purchase more renewable energy, I am still trying to figure that out. Sometimes, statutes hold out great promise from the developer's perspective, and then you get to instituting a rule, and there are a lot of rate-payers' advocates, labor unions, and other stakeholders that have a completely different perspective about what the role of the CPUC is and what the state's energy policy should be. The CPUC does its best to try to balance these interests.

I'm wondering if, by turning over that authority to the CPUC, the Legislature has created more uncertainty in our energy policy by throwing it into an apolitical, meaning non-democratic, forum where the decision will be made by five commissioners who are appointed by the governor, who can be a new person every four years.

ELLISON: The changes in AB 327 to the 33 percent requirement (in the RPS for the share of power that must come from renewable sources by 2020) are more political and cosmetic than real, for three primary reasons. First, I don't think the 33 percent was a ceiling in the first place because the CPUC already had the authority to go

above that. Second, the CPUC is fundamentally a rate-making body charged with keeping rates down. In their eyes, the issues in going above 33 percent renewables are fundamentally about what that's going to cost. Unless rates will stay in check with renewables at or above 33 percent, the commission is going to be reluctant to exercise that authority.

Third, there's the issue of renewable integration. The ISO, California's major grid operator, is extremely concerned about the ability to follow the change in loads and change in generation across certain days. As we all know, electricity is not very storable in large quantity right now, although many are working on that issue. So we have this huge issue of conventional resources being needed to ramp up very fast with the fall-off of solar generation at the end of each day, which coincides almost perfectly with everybody coming home and turning everything on. That will also have to be solved.

Eventually, I hope and expect that we will reach higher renewable penetration levels, but AB 327 has not addressed any of the real concerns about doing so, nor does it provide new authority.

BHAGWAT: We're in a period of learning. The extent to which new things come on board—dispatchable demand response, economically viable storage—they're big, big questions that we don't know

the answer to yet. Ideally we would not rely on more conventional generation to deal with the ramping problem and the intermittency of the intervals because conventional is very expensive. Especially given the closure of San Onofre Nuclear Generating Station and the problems with once-through cooling plants on the south coast, many of which are going to have to be reenergized (refurbished), there's a lot of uncertainty in the next seven years (leading up to 2020, the renewable portfolio deadline).

MODERATOR: Is SB 43, the "shared renewables" law, which requires investor-owned utilities to let their customers choose to buy only renewable energy, going to make a big difference?

SPILMAN: SB 43 could impact the utility-scale space by letting customers aggregate demand in support of local, off-site generation sources. Because of the difference between wholesale and retail pricing, there's still room for the utility to make a profit as a bankable intermediary.

DAVID SPIELBERG: The devil is really in the details: How is this going to work, and how are the utilities going to intermediate the purchases? Do you have a bankable entity out there or not?



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Unless you can look to utility credit, they are not financeable. It also might have an impact on community choice aggregation (which allows a municipality to buy renewable energy and sell it to residents).

MODERATOR: There's concern across the energy spectrum in California about how many agencies have a role in our energy market and regulation. How does that affect your practice?

ELLISON: It affects our practice every day. One of the things we emphasize to our clients is that we have to practice in front of a number of federal, state, regional, and local agencies. They all at least touch on some of the same topics. I think during the energy crisis I saw a report that 16 different agencies are involved in some fashion with California energy policy.

The collective actions of all the various agencies have resulted in an extraordinarily ambitious statewide energy agenda. We are closing San Onofre. There's debate about closing Diablo Canyon. We are trying to eliminate once-through cooling, which will likely close several other major plants. We are implementing an unprecedented effort to moderate climate change mandated by AB 32. We are trying to meet the 33 percent RPS mandate and arguably go above it, and implement distributed generation. New projects are seeing increasingly strict environmental licensing requirements for a variety of reasons. To meet federal air quality standards, we are trying to transition to electric vehicles. And, as always, we are trying to hold rates down and keep the lights on. We are rebuilding California's electric infrastructure on the fly.

SPIELBERG: It is very difficult to get renewable or conventional projects permitted and contracted, and those often have to happen simultaneously, or even the contracting first because the project's not viable unless you have an off-taker. That means it takes a lot of money and investment to go forward so it's leading to some consolidation in the industry. I think we have a real problem with supply coming up in California.

BHAGWAT: Is there one particular agency that in your experience has been a particularly major roadblock?

ELLISON: No. It is the multiplicity of agencies that is the problem. For example, we had two major utility-scale solar projects get canceled this year because they could not get through the land use permitting process in time to meet the power purchase schedule imposed under PUC decisions. Environmental permitting for large thermal projects is controlled by the California Energy Commission and a variety of other agencies, and getting those things coordinated failed.

In my experience, there are three major pieces of the puzzle—and then many lesser agencies: Transmission and interconnection (the purview of the ISO); power purchase agreements (the CPUC), and environmental regulation and permitting (the CEC and/or various federal, state, and local agencies). Those entities, each with its own cultures, criteria, and statutes, have made some real efforts to

coordinate lately to address issues of conflict and duplication, but it remains a significant challenge.

SPILMAN: That's consistent with my experience, even on the distributed-utility scale where you don't have to deal with the ISO. And even though the solar, wind, or pump hydro projects I work on don't have to go to the CEC for site approval, we still have to deal with the counties, and they have their own concerns around state-level programs. They have to deal with Williamson Act contracts, and they look at ag land designations under the Farmland Mapping and Monitoring Program administered by the state Department of Conservation.

DAY: It's been a biennial event in Sacramento for the little Hoover Commission to propose consolidating the energy regulatory agencies, or even just consolidating siting regulation. There appears little chance of that actually happening, however.

ELLISON: There's one thing that makes electric energy different from other industries: It must be generated when it is consumed. That makes it very different from a shoe factory or oil refinery or a lot of other things that can be stored. When a new plant comes online, the ISO or another balancing authority literally and immediately shuts down something else to match supply and demand in real time.

Some may believe this gauntlet that new developments have to run is good for the environment because it prevents development. The problem is that, if the new projects won't come through, the old 1950s projects continue to run. So the real environmental impact is the difference between the projects.

SPIELBERG: Right. New plants are more efficient, whether they are renewable or conventional.

MODERATOR: So is it more important to talk about improvements in technology than about renewable energy as a percentage of the power being generated?

SPILMAN: I'm not sure I'd suggest that. But storage will have a role in improving integration for renewables, and California is taking the lead role, as it has with many other fields. In the ongoing CPUC rulemaking proceeding under AB 2514, a lot of people are working to resolve the conflict between requiring utilities to purchase storage solutions, that may not yet be cost-justified, in order to give the storage technology industry a lift.

The real question legally is whether our energy storage policy, as ultimately adopted in rulemaking, will strike the correct balance and prove effective in bringing technology costs down, as we have with the California Solar Initiative (CSI, which offers consumers rebates for installing roof-top solar panels).

DAY: You run into this with every new technology. We are all dependent on technological innovation to make the California energy market work. Every time a new technology comes along,

we have to find a way to fold it into the regulatory framework, and to get the utilities to accept it. We did this with independent gas storage in California. Now we are doing it with distributed solar generation. Hopefully the same thing can happen with energy storage and with other technologies. With transmission, there has also been resistance in the regulatory environment to new technologies, such as DC transmission or high-voltage underground transmission, and one of the things lawyers can do is find a way to encourage the current stakeholders (including the utilities) to accept them into the existing framework.

MODERATOR: Is that tension restricting development of the existing regulatory frameworks?

DAY: Yes. There are few more conservative institutions in the United States than an electric utility. One very perceptive speaker at an energy conference illustrated this by saying that, “If electric utilities were in charge of marketing Kentucky Fried Chicken to the world, they would advertise it as ‘hot dead birds.’” So, yes, we have a challenge in overcoming resistance to new technologies and new ideas. It is not so much a legal challenge as a political and regulatory challenge, but overcoming that resistance is one of our highest priorities.

MODERATOR: Ash [Bhagwat], as a regulator on the ground, what’s your take on all of this?

BHAGWAT: The biggest challenge of the last three years has been coordination. There’s been a lot of effort to get the agencies moving together in the same direction. I think it has been very successful, compared to where things were five years ago. The leaders of the CPUC, the ISO, and the CEC have met regularly to set working assumptions for where solar is going, for example, and to ensure everyone is on the same page. There are obviously tensions there, and the trick is to make sure they are not roadblocks.

Encouraging new technology is an essential part of the future—whether for storage or demand response, for example—especially if, as we all hope happens, electric vehicle initiatives start making a difference. You have to plan for people plugging their car in and what that does to demand and when.

One of the questions everyone is struggling with is how to make sure these new technologies get seamlessly integrated. The ISO is trying to open its markets up to make them more responsive to different kind of bidders, including new technologies like storage and demand response, and all of this needs to happen together. We need to make sure we are not tugging in opposite directions.

DAY: There’s a really important initiative now where the ISO and CPUC are trying to foster competitive transmission infrastructure planning, and it is very challenging to have developers compete to build the same transmission project. To the extent these competing projects are all PUC jurisdictional projects, that agency can decide. But some new transmission has been built with public-private partnerships—like the Trans Bay Cable and Pathway 15 upgrades—and those projects aren’t under CPUC authority because they involve a

federal power authority or a municipal utility. So which agency can make the final decision?

We haven’t been through a full cycle of this competitive transmission planning cycle yet, but if it does enable truly competitive transmission development it will be something we will want to rely upon in the future.

BHAGWAT: It is tricky. You don’t want to build too much transmission because of cost. One of the big uncertainties is, if distributed energy takes off, that takes less transmission. But that’s crystal-balling. And building transmission is a very long process, the siting, the approval, and so forth.

ELLISON: We learned many lessons about that specific crisis and I am sure we will not repeat the last one. But we did not learn the larger lesson that our ability to predict the future is very limited. Specific to transmission, what’s happening now is that, in the effort to coordinate, we are using common generation assumptions for CEC, CPUC and ISO, even though the ISO’s purpose is quite different. The CPUC and CEC are adopting a generation procurement plan that explicitly seeks to minimize new transmission and is heavily weighted toward distributed generation. That’s laudable, but it means the ISO is planning and permitting a transmission system based on very optimistic assumptions.

If you plan for more transmission than you need, it is very easy to correct: you just do not build it. The cost is in the building. So if you over-plan and over-permit, that’s a solvable problem. But if you do the opposite, you cannot fix the problem quickly or at all. I’d like to see the CPUC have its preferred generation plan, and I’d also like to see the ISO say, “We are at least going to plan for some contingency projects ... to hedge against an uncertain future.”

BHAGWAT: Do you think investors will be willing to put money in a project that has a possibility of not going?

ELLISON: That’s a challenge. I hear you. But allowing recovery of planning and permitting costs is a small price for insurance against not enough transmission.

MODERATOR: What other technological developments at all levels of the energy generation process are under way, and what impacts do you see?

SPIELBERG: On the generation side, as the price comes down, it has a big impact. The price could come down when storage improves. It could change a lot in California. The problem with renewables is they are intermittent.

Technological change could drive a lot. The smart grid is a rubric for a lot of different technologies. With distributed generation, it could make big changes in the whole energy market. But it needs to be smarter.

BHAGWAT: Absolutely. The distribution grid is not the ISO’s jurisdiction. But, yes, we need to be smarter. Right now, it is very hard

for the ISO to see what's going on in the distribution network. That's an information technology issue.

SPILMAN: I am very curious to find out what are the market shares for distributed generation below 100 kW, below 500 kW, and so on where they don't need a CEC permit. Are we in fact getting a bang for our buck because we can defer upgrades in distribution and transmission? Does the CSI account for one-tenth of one percent of the entire retail electricity sales in the state? More? Less? I don't know.

BHAGWAT: There's an effort to do this. It's a question I have been asking for a year. The utilities have the best information.

ELLISON: The two major areas of technology I see on the near horizon are storage and electric vehicles. The centerpiece of the South Coast Air Quality Management District's strategy to comply with federal air quality rules is electric vehicles. When they recharge may reshape electric demand curves substantially and be a game changer.

SPIELBERG: Electric vehicles could also be a form of storage, depending on how people use them.

ELLISON: The optimistic assumption is that EVs will recharge at night and help balance the load. But some retailers are offering charging for customers shopping in their stores to attract them. That's not happening at night.

DAY: The smart grid technologies the utilities have installed so far I would call semi-educated, not really smart. They can do (remote) meter reading but full back-and-forth transmission at broadband speeds is not there yet. They also haven't completely used the full potential of the communication system to put all the sensors they need on the distribution grid.

Utilities routinely generate significantly more power than they need to make sure they don't ever fall below minimum voltage requirements. With smart technology in each substation they could actually run their generation closer to the limit and avoid a lot of excess generation that goes on every hour of every day. So there's a lot of low-hanging fruit that can be obtained by pressing to take full advantage of smart grid technology.

MODERATOR: What changes in financing are playing a role in energy development?

SPIELBERG: One of the things, not so much a change in financial technology, but the way we finance a lot of renewable energy in particular is through federal tax incentives. A lot of people argue that's very inefficient. It is the politician's version of off-balance-sheet financing. They don't really have to answer for it.

If you were to change the whole method of promoting renewables in this country at the federal level, more of an RPS, or feed-in tariff approach, you get rid of these contorted tax structures, it

might bring a lot more money. Right now, there is a limited number of investors, and there are limits to what they can do and get the tax breaks. If it was simply put your money in and get a return, that would work.

SPILMAN: I think we could have doubled the amount of wind power in the ground if we had a long-term policy around the Production Tax Credit, rather than a start-and-stop policy from year to year.

MODERATOR: What are some challenges posed by aging infrastructure in renewables, particularly wind installations, as well as in conventional power generation?

SPILMAN: The fact that we had such an increase in large-scale wind installations over the last five years suggests to me that as your typical five-year turbine warranty expires, there will be opportunities for independent service providers. The wind industry is actively trying, just as solar and other technologies have, to drive down cost every way they can. But it is not just about price. More mature

“The fundamental drivers of California's energy crisis were these very optimistic government assumptions, putting all our eggs in one basket.” —CHRISTOPHER T. ELLISON

wind farms can improve performance and returns by optimizing after-warranty service strategies. I think it's an area where lawyers will come back into play because it won't be just the OEMs (original equipment manufacturers) dictating, “This is our contract. If you want our turbines, this is what you sign.”

SPIELBERG: Do you think a lot of those older wind projects are going to get rebuilt? I know down in Palm Springs, for example, they had a lot of the early generation projects, great spots, but old technology. Instead of fixing them, they replaced them. Solar would also be a good candidate for repowering in the future. Most solar panels have a 25-year warranty. It's unlikely you would pull them out before that. You could repower on a block-by-block basis. You don't have to take down a whole project to do it. And as Chris [Ellison] says, if you get the tax credit for putting in new panels, then you might.

MODERATOR: So, finally, what did we learn from the energy crisis in California in 2000-2001?

ELLISON: The first thing we learned is electricity is very important and that if you screw it up, there are a lot of consequences to a lot of people, including that a governor can lose his job.

DAY: Vastly over-optimistic assumptions were made. A lot of smart people worked on the new market structure, but they made unwarranted assumptions that energy prices would stay low or trend even lower. As a result they created a 100 percent short-term market for electricity. There was no other major commodity in the United States that was sold entirely on a spot basis. Once the crisis started and prices began to climb astronomically, the PUC declined to allow the utilities to reduce the price risk by buying through long-term contracts, and the price went off the charts. We have much more rational procurement now, with proper price hedging. We won't repeat the same crisis. The question is whether we're making other unwarranted assumptions about renewable integration or the cost of our green-house gas policies.

ELLISON: There's a popular perception that the crisis was caused by Texas energy suppliers gaming the system. And there was some of that. But that didn't cause the crisis. The fundamental drivers of that crisis were these very optimistic government assumptions, putting all our eggs in one basket.

So that larger lesson relates back to what I said earlier about a little more modesty in our assumptions: California has an extraordinarily ambitious agenda, and we are assuming that we can do all these things without making any tough priority calls.

DAY: You also have to realize we are undertaking all these somewhat expensive initiatives with a cushion that we really didn't have any right to expect: historically low gas prices in North America because of the shale gas discoveries that are pushing prices down across North America.

MODERATOR: Is there a business role for conservation?

SPIELBERG: It is hard to monetize.

BHAGWAT: You need some mechanism of ensuring income streams—that's a regulatory challenge—to encourage entrepreneurs and lawyers to go out there and actually build this. It is one thing to tell people "Don't use this." It's another thing to say, "We will pay you to not use it."

MODERATOR: So the tiered rates were too crude a tool?

DAY: Very crude and while they provide an incentive to conserve and adopt renewable technologies, they often appear to be unfair to a large percentage of consumers.

SPIELMAN: And rate shock is only one aspect of the crisis. Lack of flexible capacity or flexible load, as you talk about demand response, can result in brownouts and blackouts. If I had to put my finger on a map, I'd put it on the whole LA basin. They are going to have a problem.

BHAGWAT: Hopefully not.

SPIELBERG: Are we going to build enough generation to take care of San Onofre and once-through cooling? It is very tough to get those kind of projects permitted and built.

ELLISON: I would add to what Mike [Day] said that another thing we have been relying on these years is the economic recession, which has held demand down quite dramatically in California. That's not going to continue for very long.

BHAGWAT: Congress is working on that. (Laughter.) Part of what happened in the first crisis was the supply issue, but also demand went way up.

MODERATOR: What are the biggest opportunities for your practices going forward?

DAY: I can't think of a business in California that doesn't need someone familiar with energy regulatory law. There are so many aspects of energy policy that will affect you if you're a manufacturer or retailer. Are you going to put solar on your building, participate in demand response, or switch to time-of-use rates?

SPIELBERG: Well, I think if we have to build more capacity, that's going to create opportunities in terms of developing those projects.

SPIELMAN: I would agree with that on the utility scale, but I think the trends toward distributed generation and demand-side efficiency to reduce costs and toward business aggregation tend to concentrate legal work. You get less and less project work as the projects become too small to support lawyers. So I think that's going to have an affect as we become less dependent on central station generation and relatively more reliant on distributed generation.

BHAGWAT: It seems to me there's a market for things like monetized demand response and monetized energy efficiency, and that's a very complex legal issue. You need to have contractual relationships with all of your clients.

SPIELBERG: On the scale John [Spilman] is talking about, you almost bring back another word from another crisis, you almost need to "securitize" this stuff. If you have a bunch of small projects, like rooftop solar, or demand response or energy efficiency, and if you can get standardized programs and put them in a big package and sell it to Wall Street, you could make some money.

ELLISON: On the other hand, to put my concerns about the future in perspective, when the CEC was created in 1975, the utilities forecast a new nuclear power plant every few miles up and down the coast. That is a future we avoided by virtue of some excellent government policies in the 1970s and 1980s. Hopefully, we can do it again.

SPIELBERG: In the mid-'80s they projected power prices would go up forever. ■