From:	Affonsa, Deborah
Sent:	9/30/2013 2:56:30 PM
To:	Zafar, Marzia (marzia.zafar@cpuc.ca.gov); 'Ralff Douglas, Kristin' (kristin.ralffdouglas@cpuc.ca.gov)
Cc:	Allen, Meredith (/O=PG&E/OU=Corporate/cn=Recipients/cn=MEAe); Reilly, Brooke A (/O=PG&E/OU=Corporate/cn=Recipients/cn=BARI1)
Bcc:	
Subject:	RE: ScottMadden Report

Actually Kristin – they used the title on purpose . . . . see below the article from SNL where I first heard about the report. I guess they are figuring – drama sells!

Those in the power industry who view the gradual proliferation of distributed generation resources as a "death spiral" or "mortal threat" to the utility industry might expect the latest report by consulting firm ScottMadden to only compound their concerns. But despite its grim title, "Distributed Resources and Utility Business Models: The Chronicle of a Death Foretold," the report is not all despair for the traditional business model of centralized power. Rather, ScottMadden's consultants argue, "the death of the electric utility has been greatly exaggerated."

The phrase "Chronicle of a Death Foretold" is identical to the title of a Gabriel Garcia Márquez novel in which the impending death of the main character is known by everyone but the main character. In an email, the report's lead author, ScottMadden Partner Cristin Lyons, confirmed the literary allusion was not accidental.

"When you read some of the dire predictions in the trade press, it seems many are claiming utilities may be in the same situation, where everyone predicts their demise but they remain unaware," Lyons said. An April report published by the Edison Electric Institute, titled "Disruptive Challenges: Financial Implications and Strategic Responses to a Changing Retail Electric Business," drew widespread attention to the impact of distributed generation and distributed energy resources on the electric utility industry, setting off many of the dire predictions described by Lyons. ScottMadden has a different take.

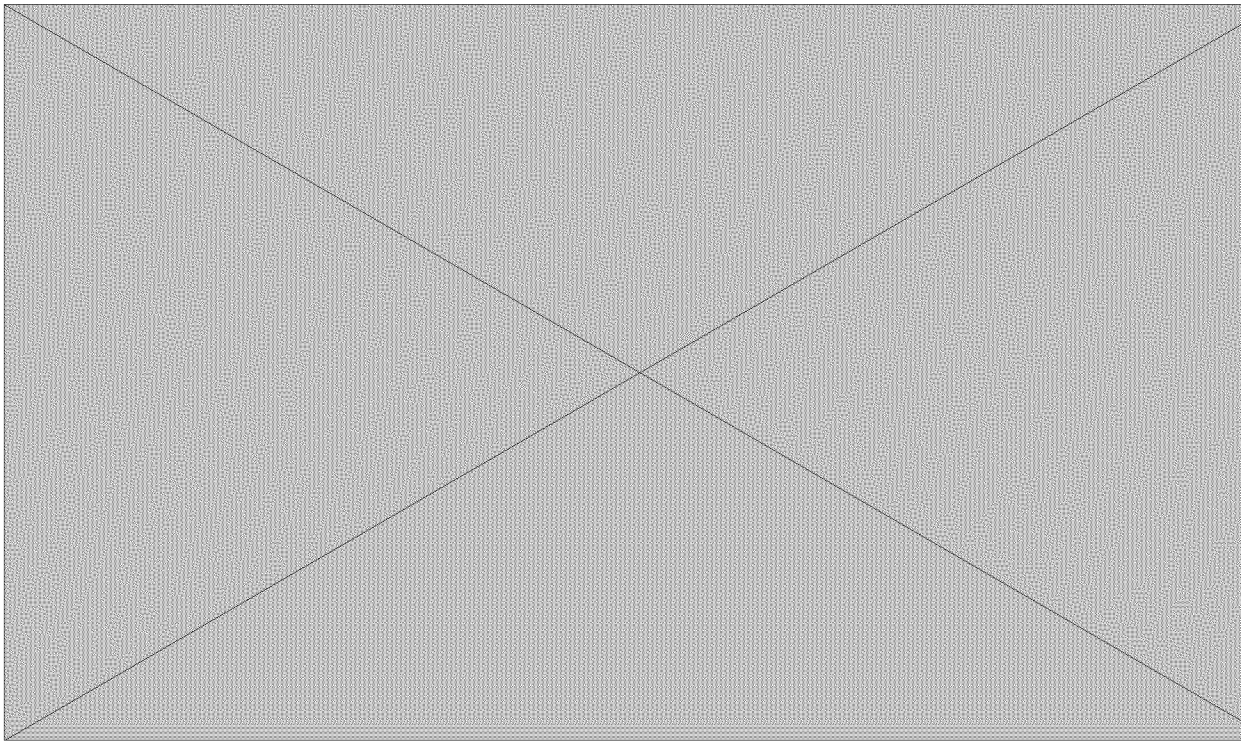
"Generally, ScottMadden doesn't believe this is the case; however, we do think there are markets where the challenges posed by distributed resources have begun to be felt," she added. "These challenges should provide important lessons and guideposts to those which have, as yet, remained unaffected."

The changes underway are occurring alongside, and in many cases are related to, the broad flattening and even decline in load growth occurring in many regions of the U.S. Driving this change, and making it easier for customers to self-supply their own power, are technological advances in distribution automation, demand response, energy efficiency and automated metering infrastructure, or AMI.

Furthermore, ScottMadden observed that customers are gaining access to self-supply technologies like distributed generation and microgrids, which are attracting attention from institutions like university campuses and military bases. The deployment of solar photovoltaic projects by customers continues its upward trajectory as the cost of such systems has hit grid parity in some regions of the country. "The experience curve effect suggests that costs may continue to decline, making the economics more attractive over time," Lyons added.

Meanwhile, alternative systems that have been in existence for some time, like combined heat and power systems, are likely to maintain growth given low gas prices, according to the report, and can lead to large industrial customers significantly reducing the amount of electricity needed from a utility. However serious, such threats to the traditional utility business model of centralized power are not necessarily urgent.

"For the majority of the country, there is no imminent or catastrophic threat," Lyons said. "For many, the risk is more like 'boiling a frog.' When the water temperature is increased slowly to a boil, a frog will not jump out of the pot — the changes in temperature are too incremental. However, based on ScottMadden's analysis, the risk for nearer term potentially disruptive change is higher in some areas of the United States than others."



Based on ScottMadden's analysis, customers are most likely to move toward self-supply in regions where electricity prices are already relatively high, making for a favorable comparison with the cost of distributed generation. Additional factors making self-supply more attractive include policies conducive to net metering and interconnection, as well as allowing for third-party ownership of generation assets and the existence of solar renewable portfolio standard "carve-outs." Given these conditions, markets in California, Massachusetts, New Jersey and Maryland have the greatest potential for widespread distributed generation, according to ScottMadden.

As an example of how utilities are grappling with these trends, look no further than Arizona, where Arizona Public Service Co. is attempting to work out disagreements on net metering with rooftop solar companies over the value of distributed generation. Though Pinnacle West Capital Corp. subsidiary Arizona Public Service has been clear in its position on net metering, many utilities have not yet had to be as explicit about where they stand.

"Many are seeking the right balance between fairness and encouraging enough distributed solar to diversify the supply portfolio without causing unintended consequences. ScottMadden believes that net metering should be carefully examined," Lyons said. "Of particular note are aggregated net metering and virtual net metering; many vertically integrated utilities will have concerns about these rate structures. That is because they change the definition of a customer, make it easy for customers to bypass the utility, and call into question fundamental tenets of the regulatory compact, such as an exclusive franchise right and obligation to serve."

Utilities, of course, will differ not only in when they confront these changes, but how they do — with the key variable stemming from the greater power conferred on customer preferences, what ScottMadden described as the "wild card" in the proliferation of distributed generation and microgrid alternatives. It's possible this greater choice on the part of the customer will force utilities to be more responsive to their preferences, particularly on environmental matters, like Apple Inc.'s decision to develop data centers using microgrids powered by on-site solar panels or the push by Tea Party groups in Georgia for more solar generation.

"Conservative Tea Party groups supporting solar, customers seeking green solutions, and those who want the security of their own microgrid in the face of super storms are examples of the kinds of segments and customer tastes and preferences that can emerge," Lyons said. "Customer preferences may cause these resources to show up in states (like Georgia) where policy and electricity prices are not particularly favorable to distributed generation in comparison to the situation in other states."

As for what utilities can or should be doing now to prepare for some of these changes, many are already taking the key step of investing in transmission infrastructure, though there is also widespread concern about who foots the bill when those transmission lines are being used for distributed generation. "Transmission is the most versatile asset that a

utility can hold in this environment and is seen by many as a 'no regrets' investment," Lyons said. "Regardless of the influx of distributed resources, we will continue to need to access central station generation, whether that is provided by nuclear, coal, gas, or renewables."

Other strategies that ScottMadden suggests utilities take primarily entail rigorously examining the assumptions governing their traditional business model to determine whether they still hold true, from the definition of a "customer" to the ability to manage a distribution grid that flows in more than one direction. Different questions confront a merchant generator, which may be able to offer new services like fast response ancillary services, or a transmission business, which may be able to take on a role as a "system integrator" of distributed resources.

Transmission and distribution investment planning may alter, too, as peak loads are reduced and shifted to specific geographic areas, potentially allowing for the delay of capital investment in once-constrained regions that now have greater flexibility. ScottMadden suggested that as the rate structures of utilities come under pressure, they may also wish to consider further segmentation of customer rate classes, with different pricing mechanisms that account for the value of the grid itself.

"The fact that some of these changes may take a long time to achieve is the reason that utilities should be planning for this evolution now," Lyons said. "In most parts of the country, utilities have the time and warning to prepare for this change. It may be a challenging transition and it may come more quickly than they anticipate, which is all the more reason to think both strategically and tactically about what the influx of these resources may mean."

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From: Ralff Douglas, Kristin [mailto:kristin.ralffdouglas@cpuc.ca.gov]
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To: Affonsa, Deborah; Zafar, Marzia
Cc: Allen, Meredith; Reilly, Brooke A

Subject: RE: ScottMadden Report

Thanks for sending this.

"The Chronicle of a Death Foretold?"? Why are they all so freaking dramatic?!

From: Affonsa, Deborah [mailto:DTA3@pge.com]
Sent: Monday, September 30, 2013 1:30 PM
To: Ralff Douglas, Kristin; Zafar, Marzia
Cc: Allen, Meredith; Reilly, Brooke A
Subject: ScottMadden Report

Ladies – I thought you might be interested in reading this short report from ScottMadden on the utility business model! I can't seem to get away from either . . .the utility of the future or business model of the future! Let me know if there is anything you need for the en banc next week . . . . .Deb

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