



C is for California©
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The difficulty in changing a highly regulated business is on display with the recent publication of the California Rule 21 Working Group Two Final Report on October 31, 2018. Rule 21 is the California interconnection process established for Distributed Energy Resources (DERs). The working group was tasked with four key issues to resolve: Issue 8 - How should Integration Capacity Analysis (ICA) be used to facilitate interconnection; Issue 9 - How can dynamic operations reduce interconnection upgrades; Issue 10 - How should Rule 21 be coordinated with other requirements to improve the interconnection process; and Issue 11 - How to simplify non-exporting storage interconnection. A fifth issue was added from working group 1, Issue 6 - What forms and agreements are required for smart inverters.

Working Group Two is one of eight working groups established in California's Rule 21 proceeding (Rate-making 14-10-003) to streamline the interconnection of DERs. Working group 1 submitted their final report in March 2018. Working groups 3-6 are expected to report out in 2019. This Rule 21 proceeding is associated with several other California regulatory proceedings seeking to establish rules and protocols for DERs, including the Distribution Resource Plans (R.14-08-013), Integrated DER (R.14-10-003), and the Integrated Resource Plan (R.16-02-007). Collectively these proceedings will shape the grid modernization infrastructure decisions that will determine how the electric grid will perform in the 21st century.

So, what is the state of Working Group 2 described in the "Final" Report? Taking a brief look at Issue 8 provides some insight into the complexity that is associated with this work. Issue 8 is:

How should the Commission incorporate the results of the Integration Capacity Analysis into Rule 21 to inform interconnection siting decisions, streamline the Fast Track process for projects that are proposed below the integration capacity at a particular point on the system, and facilitate interconnection process automation?¹

This Issue resulted in "29 sub-proposals within 23 main proposals, of which 8 are consensus and 21 are non-consensus."² The cross-section of participants in the working group provide an explanation why there are so many diverse positions. Investor Owned Utilities, Smart Inverter Manufacturers, Solar and Storage Providers, Industry Consultants, and Customer Representatives all see the elephant differently and consensus generally means a generic compromise that kicks the can on how things will really work. And of course, with the pace of technology, how things will really work is continuously evolving. Yet, the industry needs standards, rules, and protocols that do not change continuously, and the Commission has to vote on something at some time. The regulatory process does not lend itself to rapid innovation and change, nor does the critical nature of electricity supply and delivery, nor are the Investor Owned

¹ "Scoping Memo of Assigned Commissioner and Administration Law Judge", October 2, 2017, p. 3. [Rulemaking 17-07-007, Order Instituting Rulemaking to Consider Streamlining Interconnection of Distributed Energy Resources and Improvements to Rule 21.](#)

² [Working Group Two Final Report](#), October 31, 2018, p. 4.

Utilities structured and incentivized to assume people, process, or technology risk associated with significant change.

As somebody who has spent time working at Public Power and Investor Owned Utilities as well as a consultant and software vendor, this Working Group Report is not shocking. The last couple of regulatory changes in the State, both the creation of the California Power Exchange and Independent System Operator and the CAISO's Market Redesign and Technology Upgrade (MRTU) were long drawn out affairs that are still working out the kinks.

There are three words that seem critical to determining where to go from here. One is "complexity" – while it has been pointed out that the electricity grid would not look too dissimilar to Thomas Edison today, this does not truly reflect the vast interconnections, complex control of electricity, and restructured markets that exist today. It also does not fairly account for the environmental considerations in building generation, transmission, and distribution facilities. And while the industry is not a fast adopter of technology, there is a significant complexity in deployed telecommunications, protection, and control systems. The pace of change in these technologies as well as in the interconnecting DERs combined with the internal capabilities of utilities to absorb change create a complex roadmap for the industry.

The second word is "caution". This is very frustrating given the pace that these past changes have taken, but until the track record for energy policy change in California improves, caution seems to be an important component of change. Healthy skepticism on all sides exists and willing it away is not a viable solution. All parties need to accept not only the dependency on an integrated electricity grid, but also the utility change management associated with real industry change. The state will once again encounter this as Pacific Gas & Electric (PG&E) goes through and emerges from bankruptcy. Until there is a feasible alternative to electric utilities, they will exist. Lots of ideas have been floated of how to fix PG&E (e.g. "new corporate management", "gas and electric...separated", "reorganized with regional subsidiaries", "revoke holding company authorization", "reconstituted as a publicly owned utility")³ and many more will be discussed over the coming two years. But there are a host of reasons (e.g. legal liability, employee protection, customer need) that a large corporation will exist at the end of the bankruptcy proceeding.

The last key word is "criticality". This has historically been the need for modern civilization to have access to electricity. But it also includes the impact that the electric industry has on climate change and mitigation strategies. Both safe/reliable service and minimizing environmental impacts are critical. And they can both be done simultaneously, but it is unlikely they can both be done cheaply or easily. One problem the utility business encounters is trying to do everything well and often stumbling trying to please regulatory, politicians, customers, and employee demands. Most non-monopoly businesses make tradeoffs and their corporate performance reflects their ability to manage these trade-offs. Monopoly service area corporations often seem to try to please everybody and create dysfunction that slows everything. What California stakeholders need to define is the criticality of need from the electric utilities. Asking for everything is unlikely to be effectively managed by the utility. Some things really

³ Investigation on PG&E Corporation's Organizational Culture and Governance Prioritize Safety (I.15-08-019), "Assigned Commissioner's Scoping Memo and Ruling", December 21, 2018, pp. 9-12.

must be more important than other things and hoping that utilities can “just do it” all is going to be disappointing.

A bit of realism is not all that bad. Not everything works like Steve Jobs’ “reality distortion field.” It has not worked in the past with California energy policy and the best road forward is going to be significant work for all involved.