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**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking Regarding Policies, Procedures and Rules for Development of Distribution Resources Plans Pursuant to Public Utilities Code Section 769.	Rulemaking 14-08-013 (Filed August 14, 2014)
And Related Matters	Application 15-07-002 Application 15-07-003 Application 15-07-006

(NOT CONSOLIDATED)

In the Matter of the Application of PacifiCorp (U901E) Setting Forth its Distribution Resource Plan Pursuant to Public Utilities Code Section 796.	Application 15-07-005 (Filed July 1, 2015)
And Related Matters	Application 15-07-007 Application 15-07-008

**RESPONSE OF THE UTILITY REFORM NETWORK TO
SCE'S MOTION FOR MEMORANDUM ACCOUNT**



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RESPONSE OF THE UTILITY REFORM NETWORK TO SCE'S MOTION FOR MEMORANDUM ACCOUNT

Pursuant to Rule 11.1(e) of the Commission's Rules of Practice and Procedure, The Utility Reform Network ("TURN") submits this response to the *Motion of the Southern California Edison Company to Establish a Grid Modernization Memorandum Account* ("SCE Motion"), filed on July 13, 2016.

1 Summary of TURN's Recommendations

SCE requests authority to open a memorandum account – the "Grid Modernization Memorandum Account" - to record the revenue requirements associated with approximately \$100 million in capital expenditures for automation and IT projects in 2017. SCE forecasts that the revenue requirement associated with these costs would be approximately \$5 million.

SCE appears to be requesting this authority so it would not lose \$5 million in 2017, and so that there would be some presumption of reasonableness of spending on this automation and IT work when the Commission subsequently reviews the costs in the GM Memorandum Account in order to authorize cost recovery.

SCE claims that these expenditures are incremental to costs already authorized for these activities in the last rate case, and that these costs could not have been foreseen in the last rate case. But SCE offers little explanation or support for these claims. TURN strongly disagrees, and opposes SCE's request for three reasons. First, SCE has failed to make the case that these investments are foundational and necessary to accommodate more distributed energy resources ("DERs") on its system. SCE raises fears that its distribution system will soon become "like Hawaii," resulting in delays in interconnecting more solar distributed generation. However, SCE presents no evidence to support this assertion, aside from one misleading statistic about the

growth of solar on its system that mixes distributed and utility-scale solar generation. The actual data show that SCE has been able to accommodate more *distributed solar generation* at very low costs in the past several years, and SCE should await further Commission guidance in this proceeding before spending massive amounts on DER integration.

Second, while SCE claims that these expenditures are “incremental,” SCE intends to spend money on assets - such as remote fault indicators and remote control switches - which are already funded through general rate case revenues. It will be extremely difficult to determine which asset installations are actually “incremental,” especially if the number of switches installed is different than forecast in prior rate cases.

Third, SCE claims that this automation work could not have been foreseen because it was caused by legislative and Commission directives issued after the filing of SCE’s 2015 rate case. Such an attitude flies in the face of Commission policies established since 2003, and in the face of the reality of the growth of distributed solar generation on SCE’s system since at least 2011.

In addition to these three reasons why memorandum account treatment is not appropriate, TURN also recommends that SCE desist from significant investments until it receives additional policy guidance in this proceeding. SCE’s approach appears based on fulfilling a vision of a “plug-and-play” distribution grid. But such a vision conflicts with the statutory directive that DERs provide “net benefits” to ratepayers, and SCE’s spending plan creates the risk that SCE will spend much more to “modernize” circuits in “anticipation” of DERs than it would spend to upgrade circuits where DER deployment is actually occurring.

2 SCE Has Failed to Demonstrate Any Problems with the Integration of Distributed Energy Resources That Require Additional Incremental Spending Just in 2017

SCE’s Motion is replete with rhetoric about how its Grid Modernization work is necessary and “foundational” to promote the future distribution system architecture necessary to

accommodate the “timely, unhindered integration of DERs.”¹ The Commission should closely examine SCE’s justification for additional incremental spending on automation and IT in 2017, and should then conclude that there is actually no need for any additional funding for 2017 to perform incremental work.

2.1 SCE’s Justification is Long on Rhetoric but Fails to Identify Any Problems with DER Integration that Cannot Be Addressed by Existing More Cost-Effective Solutions

Despite much rhetoric about the clean energy future and the DRP vision, SCE does not even attempt to argue that there are any immediate problems with interconnecting or accommodating DERs that warrant authorizing a memorandum account for incremental spending. SCE’s argument rests entirely on the proposition that it must accelerate grid modernization work – work that has already begun with funding in the last rate case – in 2017, rather than waiting until 2018, in order to “adhere to the DRP timeframe” and “meet the pace of DER penetration.”²

SCE’s only evidence is presented on page 3 of the Motion, where SCE explains that in 2015 it interconnected 1,258 megawatts of solar power to the grid, more than any other utility in the United States, and SCE notes that its forecast of PV adoption by 2025 has increased significantly since the last rate case. SCE does not even allege that it has experienced any problems with DER integration to date.

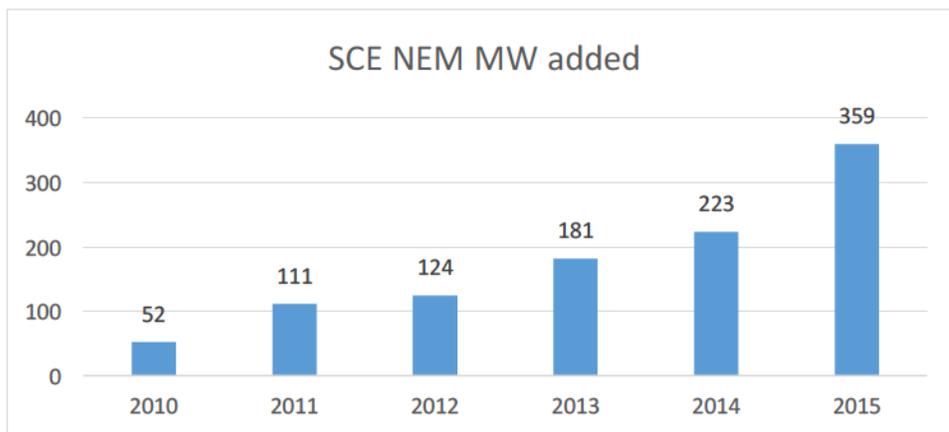
The key fact is that even if solar distributed generation is growing faster than expected in 2013, which TURN does not deny, there is still no need for a large amount of incremental spending in 2017. SCE has been interconnecting increasing amounts of behind-the-meter solar generation and storage at an increasing pace in 2014 and 2015 at very low costs.

¹ SCE Motion, p. 8.

² SCE Motion, p. 7-8.

It is true that SCE has interconnected a large amount of solar generation, although the 1,258 MW cited by SCE includes utility-scale solar generation interconnected at the transmission level, and is thus irrelevant. The relevant data show that SCE interconnected about 360 MW of distributed solar in 2015, but has been integrating increasing amounts of rooftop solar since about 2010, as illustrated in Figure 1 below.

Figure 1: NEM MW installed each year in SCE Service Territory³



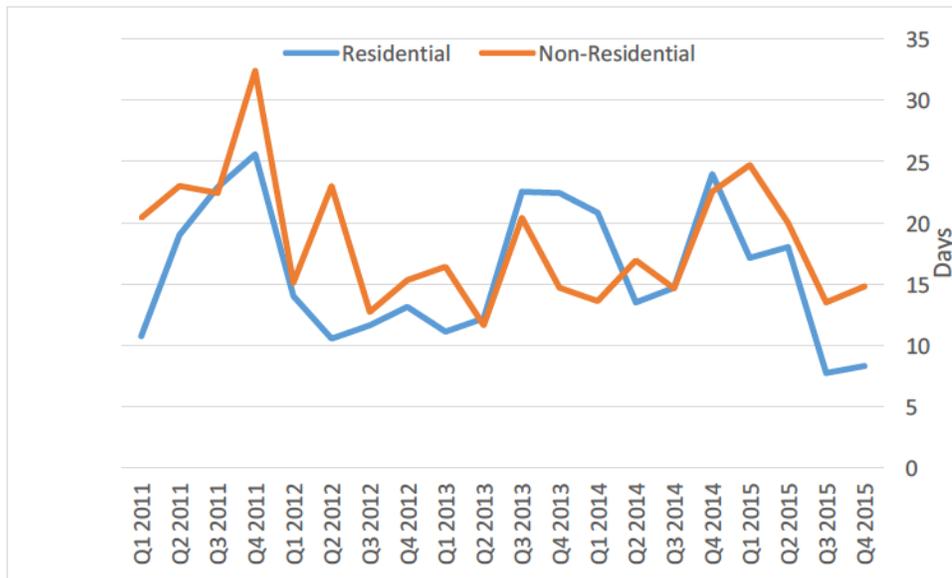
Between November 1, 2013 and May 31, 2015, in the middle of this period of record growth in solar photovoltaic installation, SCE spent a total of \$2.606 million on all distribution engineering and upgrades to interconnect behind-the-meter generation.⁴ In other words, SCE had to do very little work on its distribution system to integrate the behind-the-meter solar installations during this 2014 time period.

At the same time, from 2011 through 2015 SCE reduced or kept steady the amount of time to interconnect retail solar customers:

³ Source: CSI Annual Reports, Table 2. Additions for 2010 are partial year only (May-Dec) and thus understate additions in 2010.

⁴ SCE Advice Letter 3239-E, June 30, 2015, Attachment A, p. 2.

Figure 2: SCE Average Interconnection Time⁵



These data do not evidence any near term problem with accommodating high levels of DERs on SCE’s distribution grid. Existing infrastructure modernization efforts have proved entirely adequate, such that costs and interconnect times have fallen even while the number of DER megawatts have increased.

2.2 The Commission Should Not be Swayed by “Hawaii” Fear-Mongering, Since California is Nowhere Near Hawaii in Grid Architecture or Solar Penetration

Rather than documenting any actual problems, SCE notes that “Hawaii serves an example of the problems that can arise when the grid is not prepared to handle high penetrations of solar and other DERs.”⁶ The Commission should not be swayed by fearmongering without data and by threats of “Hawaii.” The truth is that SCE is nowhere near the point of Hawaii, and SCE’s distribution grid is quite different.

⁵ Source: California Solar Statistics, at: https://www.californiasolarstatistics.ca.gov/reports/data_annex/

⁶ SCE Motion, p. 4.

Hawaii has six separate distribution systems on six islands served by four utilities. The largest system peak demand on Oahu is 1,200 MW, compared to SCE's system peak of about 25,000 MW. Customer-sited generation capacity is between 30% and 53% of peak demand on the islands,⁷ as compared to about 3.3% on SCE's system.⁸ Most critically, a large number of circuits on some islands have behind-the-meter solar capacity exceeding 100% of daytime minimum load, with many circuits exceeding 250% of daytime minimum load.⁹ The data presented by SCE as part of its ICA analysis in this proceeding do not indicate any comparable levels of solar distributed generation penetration.¹⁰

It is the very high solar capacity on individual circuits that creates potential problems with voltage or equipment thermal limits. TURN's evaluation of the ability of circuits to accommodate high levels of distributed generation indicates that hosting capacity is a very *circuit-specific* issue. TURN appreciates that there could be problems on *certain circuits* when those circuits reach very high levels of solar generation. However, SCE's DRP and RAM

⁷ Thomas C. Gorak, Commissioner, Hawaii PUC, "Advancing Renewables: Lessons Learned in Hawaii," March 2016, p. 14. Available at: <http://www.eia.gov/conference/2016/pdf/presentations/gorak.pdf>. See, also, HECO Power Facts 2016, available at www.hawaiianelectric.com.

⁸ SCE AL 3431-E, July 11, 2016. TURN assumes that the more proper number for SCE to make and apples-to-apples comparison is likely to be about 6.6%, given that California's method of measuring peak load using "aggregate non-coincident peaks" only for NEM purposes is probably different from the coincident peak load used in any other state. Even SCE's "revised" forecast of 6,400 MW of distributed solar PV by 2025 would result in about 25% PV penetration compared to coincident peak demand, still significantly lower than the 53% on Maui.

⁹ Thomas C. Gorak, Commissioner, Hawaii PUC, "Advancing Renewables: Lessons Learned in Hawaii," March 2016, pp. 8, 19. Available at: <http://www.eia.gov/conference/2016/pdf/presentations/gorak.pdf>

¹⁰ The SCE ICA spreadsheets (available on the CPUC DRP website) show that total system hosting capacity (summed for the four line segments) is in the range of 45,000 MW. But this number is not terribly meaningful. SCE presented data for its top 1% of circuits (by DG penetration), but did not provide data on the minimum load on these circuits.

mapping data does not demonstrate widespread critical problems. Any local problems resulting from high penetration of solar DG on a very small number of circuits are better addressed when they come up, through the normal process of distribution system engineering.

SCE is nowhere near the very high levels of capacity on many circuits that are present in Hawaii, and SCE has presented no data or evidence in its Motion that indicates that there are any problems that warrant accelerating Grid Modernization investments before any review in the upcoming rate case. There is simply no basis for assuming that \$100 million in immediate investments is reasonable, when SCE spent less than \$3 million to upgrade its distribution system to interconnect NEM projects in 2013-2015.

3 SCE Already Has Significant Authorized Funding for Substation and Circuit Automation, and There is No Need for Incremental Funding, as the Growth of Distributed Energy Resources Is Not an Unforeseen Circumstance

3.1 SCE Got Funding for Substation and Grid Automation in Both the 2012 and 2015 General Rate Cases

SCE seeks to memorandum account to track the revenue requirement associated with “capital expenditures of approximately \$100 million for automation and IT expenditures placed-in-service in 2017.”¹¹ The forecast 2017 revenue requirement associated with this \$100 million in spending would be about \$5 million.¹²

The 2017 spending would cover four categories:

1. Substation Automation: Installation of IT and telemetry in order to remotely modify and operate relay settings and circuit breakers;¹³

¹¹ SCE Motion, p. 10.

¹² SCE Motion, p. 19.

¹³ SCE Motion, p. 10.

2. Remote Fault Indicators: Installation of remotely communicating fault indicators on feeders;¹⁴
3. Remote Switching Equipment: Installation of remote control switches;¹⁵
4. IT Upgrades: Developing IT systems for six tools and applications.

SCE spends approximately \$3 billion in capital expenditures on its distribution system each year. This spending includes lots of different asset replacement and upgrading. The Commission has authorized \$20 to \$40 million in each of the past two rate cases for work that is either exactly the same, or very similar, to the work in the four categories being forecast for this memorandum account, as illustrated in Table 1.

Table 1: Work on Distribution Automation Authorized in Prior Two Rate Cases¹⁶

	Amount Authorized in 2012 GRC (Decision 12-11-051)	Amount Authorized in 2015 GRC (Decision D.15-11-021)
Substation Automation	Disallowed as premature (Sec. 5.2.3.5)	
Remote Fault Indicators	\$17.036 million (Sec. 5.2.3.1)	\$21 million (Sec. 7.3.3.3)
Remote Switches		
IT Upgrades	\$23.205 million (DMS system, Sec. 5.2.3.6)	

The key problem is that it will be extremely difficult to determine the incrementality of any additional spending on substation and circuit automation.

¹⁴ SCE Motion, p. 11.

¹⁵ SCE Motion, p. 12.

¹⁶ TURN only identifies work specifically earmarked for distribution or substation automation. It may well be that other asset programs (for example, replacing fault indicators) fund similar work.

3.2 SCE Does Not Require a Memorandum Account To Perform Needed Work in 2017

SCE is asking the Commission to allow it to record the revenue requirements associated with \$100 million in capital spending in 2017, and to review the reasonableness of such spending in its upcoming rate case. However, if SCE believes that this spending is necessary to provide safe and reliable service, SCE can either 1) include this spending in the 2017 forecast in its upcoming rate case filing, or 2) simply go ahead and spend the money. In either case, the capital expenditures would get reviewed for reasonableness in the next rate case, when capital additions are trued-up to rate base. Essentially, the only difference is that SCE would lose the ability to recover the one-year revenue requirement (depreciation, return and taxes) associated with this spending, which SCE forecasts at \$5 million.

TURN suggests that there is little basis for creating a new memorandum account, and requiring a subsequent reasonableness review of recorded costs, in order to address an incremental revenue requirement of \$5 million.

3.3 The Reason SCE Already Has Funding for DER Integration Is Because This is Not an Unforeseen Issue

SCE claims that a memorandum account is warranted because “SCE could not have foreseen the need for Grid Modernization projects, because they are directly related to a statute and Commission policy developed after SCE’s 2015 rate case was filed.”¹⁷ This statement ignores over a decade of policy, the reality of solar growth on California, and actual funding authorized in SCE’s prior two to three rate cases.

It is difficult to understand how SCE could claim that grid modernization related to the actual market deployment of DER assets is an “unforeseen” development. As highlighted in the

¹⁷ SCE Motion, p. 19.

Commission's Guidance Document, the Commission has promoted the installation of DERs since at least 2001.¹⁸ SCE has sought and received funding for programs to do distribution automation, substation automation, and grid reinforcement in its prior rate cases, as discussed above.¹⁹ Such spending is in addition to much higher amounts that SCE obtains for various distribution-related capital expenditures for infrastructure replacement, including all types of assets.

Indeed, Table 1 above illustrates that SCE has not only obtained authorization for various grid automation projects, not including R&D projects funded by EPIC, but also SCE has justified that funding as necessary to accommodate distributed energy resources, as illustrated in the following example:

SCE forecasts \$16.043 million in capital funding in 2012 when the project is scheduled to be deployed. The forecast is based on vendor quotes, SCE's experience, and estimates developed for its Irvine Smart Grid Demonstration project. SCE argues the projects are a necessary prerequisite to achieve Smart grid policy goals to integrate distributed energy resources.²⁰

While TURN is sympathetic to the fact that the deployment of distributed solar systems increased dramatically in 2015, this is not a situation that should have been unexpected in the fall of 2013, when SCE filed its last rate case.²¹ SCE highlights that it connected "1,258 new MWs of residential, commercial and utility-scale solar power to the grid in 2015, more than any other utility in the United States."²² However, as discussed above, the majority of the MW

¹⁸ ACR Guidance Ruling, February 6, 2015, p. 2.

¹⁹ See, for example, D.12-11-051, Sections 5.2.2 and 5.2.3 (SCE requested \$173.6 million in 2010-2012 for Advanced Technology capital. The Commission authorized \$32 million for circuit automation, \$0.3 million for smart distribution transformers, about \$13.5 million for communications with automated distribution devices, \$5.3 million for the integrated smart distribution project, and over \$23 million for a distribution management system).

²⁰ D.12-11-051, SCE 2012 GRC, p. 118.

²¹ SCE's 2015 rate case Application 13-11-003 was filed on November 12, 2013.

²² SCE Motion, p. 3.

interconnected in 2015 were due to utility-scale projects, which are not relevant to SCE's motion for recovery of distribution-level costs.

4 SCE's Interpretation of Commission Policy Concerning the Deployment of DERs Is One-Sided and Ignores the Key Policy Goal to Optimize DER Deployment Where Beneficial

The Commission should be extremely careful about authorizing SCE to record costs for the deployment of equipment that is targeted at specific substations and circuits. SCE explains that it needs to continue and expand the system automation work that commenced in 2016 in order to "enable steady and sustainable progress" that will "allow SCE to safely interconnect, enable, and optimize DERs due to additional switching and restoration capabilities." SCE expects these efforts "to modernize and reinforce the distribution system" to grow so as to "meet the DRP vision of unhindered integration of expected DERs."²³

There are at least two very troubling aspects of SCE's description. First, though it claims this work is foundational to create "a platform for a distribution system market," the most explicit description of the planned work suggests that SCE will really be installing assets at specific substations and installing fault indicators and relays on specific circuits. It is unclear which circuits SCE is targeting, and whether such assets are truly necessary to integrate DERs. TURN is especially concerned given the extremely low costs to date of interconnecting retail distributed generation.

Second, SCE's planned work appears to be predicated on "the DRP vision of unhindered integration of expected DERs."²⁴ SCE explains that as it believes this vision requires it to

²³ SCE motion, p. 8.

²⁴ SCE Motion, p. 8.

“modernize the electric distribution system to accommodate two-way flows of energy and energy services throughout the IOUs networks.”²⁵

SCE’s vision reflects that notion that the utilities should make their entire distribution grid available to DERs for “plug and play.” Missing from this vision is the concept of targeting DERs to portions of the distribution grid where the DERs can provide actual economic benefits, rather than just incurring costs to interconnect the DER. TURN has consistently argued that it makes no sense, and violates the “net benefits” requirement of § 769, to spend billions of dollars²⁶ to accommodate DERs everywhere on the grid, just to save perhaps tens of millions in distribution capacity costs. Indeed, many of the “grid modernization” investments likely increase circuit capacity, thus reducing any potential future benefits of DERs.

The Commission has adopted as the goal for the integration of distributed energy resources the deployment of DERs “that provide optimal customer and grid benefits, while enabling California to reach its climate objectives,” and has explicitly stated its intent to explore the “tension between providing optimal customer and grid benefits and maximizing customer participation.”²⁷ The Commission also explained that one of the goals of the DRP is to determine how best to target DER deployment to areas where DERs provide maximum system value.²⁸ How to achieve this goal is one of the primary purposes of this Rulemaking.

²⁵ SCE Motion, p. 5.

²⁶ SCE’s high end of its range of estimated costs for grid modernization and reinforcement in 2015-2017 is about \$3 billion. SCE DRP, p. 213.

²⁷ D.15-09-022, pp. 18, 20; and Ordering Paragraph No. 4, p. 28.

²⁸ For example, D.16-06-052, p. 25 (“We further anticipate that the Integration Capacity Analysis being developed in the Distribution Resources Plan proceeding (R.14-08-013) will help direct developers to grid locations with adequate hosting capacity (and thus a lower chance of triggering significant distribution system upgrades).”).

The Commission should not bless SCE’s grid modernization investments prior to providing this critical guidance. While SCE claims that the “Grid Modernization” work is foundational, and will not prejudice any major policy direction eventually provided by the Commission in this Rulemaking,²⁹ SCE’s description of the actual work contradicts this explanation. The amount and pace of SCE’s asset investments should be guided by Commission policy in this proceeding; otherwise, it is very likely that SCE will spend much more to “modernize” circuits in “anticipation” of DERs than it would spend to upgrade circuits where DER deployment is actually occurring.

5 Conclusion

The Commission should deny SCE’s request. SCE has not established that it needs an additional \$100 million in 2017 for grid modernization, on top of the amounts already authorized for substation and circuit automation in the last rate case. It would be extremely difficult to track “incremental” expenditures on assets and equipment that SCE is already installing on its system.

SCE has not demonstrated a need to start spending on circuits and substations due to large amounts of solar PV or other DER installations. SCE has successfully interconnected large amounts of NEM solar generation at a cost of less than \$2 million per year in 2014. The Commission should provide SCE with policy guidance, and review proposed spending in the upcoming rate case, rather than blessing additional spending for 2017 at this time. Most importantly, the Commission should be mindful that any comparison to “Hawaii” is inaccurate and misleading. Hawaii has extremely small systems with NEM capacity at levels of 30% to 50% of peak load, as compared to less than 4% in California.

²⁹ SCE Motion, p. 16.

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