



BEFORE THE PUBLIC UTILITIES COMMISSION OF THE
STATE OF CALIFORNIA

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Order Instituting Rulemaking to Consider Smart
Grid Technologies Pursuant to Federal
Legislation and on the Commission's Own
Motion to Actively Guide Policy in California's
Development of a Smart Grid System

R. 08-12-009
(Filed December 18, 2008)

**SOUTHERN CALIFORNIA EDISON COMPANY'S (U-338-E) REPLY COMMENTS TO
ASSIGNED COMMISSIONER AND ADMINISTRATIVE LAW JUDGE'S JOINT
RULING AMENDING SCOPING MEMO AND INVITING COMMENTS ON
PROPOSED POLICIES AND FINDINGS PERTAINING TO THE SMART GRID**

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I.

INTRODUCTION

Southern California Edison Company (SCE) appreciates the opportunity to respond to other parties' comments submitted in response to the Assigned Commissioner and Administrative Law Judge's (ALJ) Joint Ruling Amending Scoping Memo and Inviting Comments on Proposed Policies and Findings Pertaining to the Smart Grid ("Ruling"). In the comments below, we also address certain points that were raised during the course of the March 2010 workshops held by the Commission in this Rulemaking ("workshops").

SCE's Reply Comments focus on issues related to Smart Grid Deployment Plans ("Deployment Plans"), customer usage data, customer pricing data, the appropriateness of a centralized statewide database for customer data, privacy of customer information, and third-party access to customer data.

II.

SMART GRID DEPLOYMENT PLANS

Per the ALJ's suggestion during the workshops, SCE provides below a concise proposal that addresses: (i) the form that Deployment Plans should take and the contents that should be included; and (ii) the timeline and process for the Commission to evaluate Deployment Plans. The three California Investors Owned Utilities (IOUs) have discussed these proposals and have endeavored to put forth a consistent set of proposals.

A. Proposal for IOU's Deployment Plans

SCE envisions that Deployment Plans will be written documents that will contain the following seven elements:

1. *Smart Grid Vision Statement* – Each Deployment Plan submitted on July 1, 2011 should contain a statement articulating each IOU's vision for a Smart Grid. The vision statement should be consistent with the Commission's Smart Grid objectives as contained in the eight bullet-pointed "must haves" listed on pages 12 and 13 of the Ruling (subject to any changes to these "must haves" in the Final Decision for Phase II of this proceeding).
2. *Smart Grid Deployment Baseline* – The Deployment Plans should describe the current state of each IOU's Smart Grid systems, identify the smart grid technologies that have been deployed by the IOU in the past 10 years, and describe the basic scope of the deployment of those technologies (*i.e.*, provide a quantitative or qualitative description of the extent of deployment for each technology has been deployed on the IOU's Smart Grid systems). This baseline will serve as one foundational item in evaluating the starting point for the 2011 smart grid deployment plans.

3. *Smart Grid Strategy* – Each IOU should describe their strategy for evaluating Smart Grid technologies and deploying those technologies that it deems will create sufficient customer value and are technologically mature and commercially available. This strategy section should demonstrate how an IOU prioritizes its technology evaluation and deployment efforts against the Smart Grid objectives described in item number 1 above. The IOU’s strategy section should describe a formal decision-making framework.

4. *Smart Grid Roadmap* – Each Deployment Plan should contain a Roadmap that lists the areas of technology evaluation and deployment under consideration by the IOU. The Roadmap should also provide provisional guidance on the timing of evaluations and deployments in each of these areas between years 2011 and 2020. The Commission should not dictate specific technology areas to be covered in Deployment Plans; instead, the Commission should ensure that the Plans address the Commission’s eight Smart Grid objectives. Technology areas included in the Deployment Plans are dynamic and evolving, and are subject to change as public policy, business conditions, and technological capabilities change over time.

5. *Cost Estimates* – Where possible, SCE will provide filed costs or conceptual cost ranges for technologies we are evaluating or considering for deployment during the period covered by the Deployment Plans. SCE’s ability to accurately forecast these costs pivots around a variety of factors, including how nascent or mature the technology may be, and the length of time between current evaluation and the actual anticipated date of deployment of the technology. For example, as part of its Test Year 2012 GRC, SCE will be developing projected costs for ongoing Smart Grid technology evaluation and capital projects for years 2012 through 2014. SCE plans to include this information in its Deployment Plan. However, for the years 2015 and beyond, SCE necessarily can only

provide conceptual range estimates of costs for informational purposes. In light of the dynamic and changing nature of the regulatory environment, as well as the uncertainties that necessarily accompany the development of nascent and complex technologies, these conceptual range estimates will be subject to change, and therefore should not be used for reasonableness review of specific projects.

6. *Benefit Categories* – IOUs should identify the types of benefits that they expect will be generated by each technology included in a Deployment Plan. SCE proposes that three overall categories of benefits should be used for this section of the Deployment Plans:

(1) Policy Requirements – the technology is beneficial because, after evaluation and study, the utility believes the technology serves as a “best fit” for achieving compliance with regulatory or statutory mandates.

(2) Reliability and Safety – the technology is beneficial because the utility deems it a “best fit” technology for improving system reliability, or maintaining or improving safety for our customers, employees, and members of the public.

(3) Business Case – the technology is beneficial based on traditional net present value revenue requirement cost-benefit analysis.

7. *Metrics* – The Deployment Plans should encompass a metrics section that reports on the metrics discussed in section II.C. below. (These suggested metrics were also discussed in detail in SCE’s opening comments).¹

B. Commission Consideration of Deployment Plans

Pursuant to California Senate Bill 17 (“SB 17”),² the Commission must set requirements for Deployment Plans by July 1, 2010. IOUs must in turn submit Deployment Plans by July 1,

¹ SCE’s Opening Comments to Ruling, pp. 21-22.

2011 for Commission approval. The Ruling proposes that IOUs file annual updates to Deployment Plans, on October 1 of each year using data current as of June 30 of that year. The Ruling also contains a proposal that IOUs compile and report a set of metrics to measure the progress of Smart Grid deployment in California.

As described in SCE's opening comments, SCE agrees that Deployment Plans should be updated on an annual basis, to accommodate changes in the landscape for Smart Grid technologies.³ Moreover, SCE suggests that IOUs report the Smart Grid metrics listed in Section II. C. below as part of the annual updates.

With respect to Commission acceptance of Deployment Plans, SCE proposes that the Commission evaluate Deployment Plans and updates to ensure that the Plans: (1) address each of the seven elements described in Section A. above, and (2) demonstrate alignment with the eight "must have" Smart Grid objectives discussed above and listed on pages 12-13 of the Ruling (subject to any changes that the Commission might make to these "must have" objectives in the Final Decision for Phase II of this proceeding). We respectfully suggest that the Commission evaluate, and decide whether or not to accept, the Deployment Plans within 120 days of the IOUs' submission of the Deployment Plans, and within 75 days of submission of each subsequent annual update.

SCE proposes the following timeline for IOU submission and Commission consideration of metrics, Deployment Plans and updates thereto:

Continued from the previous page

² Senate Bill No. 17, Padilla. Electricity: smart grid systems. Added Chapter 4 (commencing with Section 8360) to Division 4.1 of the Public Utilities Code, relating to electricity. Approved by Governor on October 11, 2009. Filed with Secretary of State on October 11, 2009.

³ SCE's Opening Comments to Ruling, p. 4.

2010	<ul style="list-style-type: none"> • <i>October 1</i>: IOUs submit metrics listed in Section II.C of these reply comments. Metrics should be annualized as of December 31, 2009.
2011	<ul style="list-style-type: none"> • <i>July 1</i>: IOUs submit Deployment Plans. • <i>October 1</i>: IOUs update metrics listed in Section II.C, current as of December 31, 2010. • <i>November 1</i>: Commission completes evaluation and acceptance of Deployment Plans.
2012	<ul style="list-style-type: none"> • <i>October 1</i>: IOUs submit 1st Annual Deployment Plan Update, including metrics listed in Section II.C, current as of December 31, 2011. • <i>December 15</i>: Commission completes evaluation and acceptance of IOUs' Deployment Plan Updates.
2013-2020	<ul style="list-style-type: none"> • The IOUs and the Commission, respectively, continue to annually submit and evaluate Deployment Plan Updates using the schedule established for year 2012.

C. Metrics

Several parties commented on the list of Smart Grid metrics that the Ruling proposed for inclusion in Deployment Plans.

The Department of Ratepayer Advocates (“DRA”), the Utility Reform Network (“TURN”), the California Large Energy Customers Association (“CLECA”) and San Diego Gas & Electric (“SDG&E”) each pointed out risks associated with the use of metrics. In workshop presentations, DRA asserted that metrics should “have a purpose” or they risked “being a waste to time.” DRA also noted in their opening comments the ambiguity of -- and complexity involved with collecting -- several of the metrics proposed in the Ruling.⁴

⁴ DRA’s Opening Comments to Ruling, pp. 18-19.

Moreover, in workshop presentations and comments filed in this proceeding TURN, CLECA and SDG&E noted the risks of assuming that “more is better” when using metrics, and warned against the tendency of businesses to build towards what is measured. DRA also cited the need for flexibility with respect to metrics by stating that “[r]egardless of what metrics are adopted, they may need to change once deployment plans are adopted, and will likely need adjustment down the road as technology and the Smart Grid is developed.”⁵

DRA and the Consumer Federation of California (“CFC”) proposed including cost-effectiveness metrics in Deployment Plans. DRA noted that “there are no metrics measuring cost-effectiveness,” and stated that a “metric should be included showing savings and increases to actual bills due to smart Grid technologies.”⁶ Similarly, CFC stated that “[c]ost-effectiveness must be included in metrics used to measure the success of smart grid installations.”⁷

The Utility Consumers’ Action Network (“UCAN”), the Center for Democracy & Technology and The Electronic Frontier Foundation (“CDT/EFF”), Tendril, the California Energy Storage Alliance (“CESA”) and the Environmental Defense Fund (“EDF”) proposed adding metrics to the list proposed in the Ruling. UCAN and CDT/EFF suggested several additional metrics related to customer privacy.⁸ Tendril proposed additional metrics related to renewable energy integration and greenhouse gas emissions.⁹ CESA proposed additional metrics related to energy storage,¹⁰ and EDF proposed additional metrics related to furtherance of energy and environmental policies.¹¹

Finally, DRA “suggests that the Commission hold a workshop to further develop Smart Grid metrics.”¹²

⁵ *Id.* at p. 18.

⁶ *Id.*

⁷ CFC’s Opening Comments to Ruling, p. 8.

⁸ UCAN & CDT/EFF’s Opening Comments to Ruling, pp. 35-37.

⁹ Tendril’s Opening Comments to Ruling, p. 10.

¹⁰ CESA’s Opening Comments to Ruling, pp. 7-8.

¹¹ EDF’s Opening Comments to Ruling, pp. 19-20.

¹² DRA’s Opening Comments to Ruling, p. 19.

Metrics can be useful in helping the Commission fulfill its annual reporting obligations to the Legislature and Governor pursuant to SB 17. However, the Commission should avoid the use of costly, potentially ambiguous, or onerous metrics that may not correlate with achievement of the Commission's policy goals. Both the Commission Staff and IOUs are unduly burdened by obtaining and reporting such metrics. In our opening comments, SCE proposed a list of 10 metrics, derived from the Ruling's list, that provide an initial set of measuring points to gain a meaningful assessment of progress in Smart Grid deployment. These 10 metrics can be gathered and reported by the IOU, and evaluated by the Commission Staff, in a relatively efficient and cost-effective manner. The list of metrics can be modified as needed as Smart Grid technologies and systems evolve.

As stated in the Ruling, the purpose of the metrics is to "measure progress in implementing a Smart Grid in California" and to "measure [a utility's] performance relative to the metrics as part of its Smart Grid deployment plan."¹³ As such, the Commission should adopt in the near term a discrete list of clear metrics that will not impose substantial incremental costs on IOU ratepayers for the IOU to collect and store the information.

The appropriateness and relevance of specific metrics will evolve over time as the technologies that IOUs describe in their Deployment Plans evolve and change as well. Imposing reporting requirements today for metrics related to technologies or Smart Grid systems that remain to be evaluated risks creating incorrect incentives for IOUs' Smart Grid investments, and would impose unnecessary burdens on both IOUs and Commission staff. SCE believes that the metrics it proposed in its opening comments (presented again below for the Commission's reference) can help the Commission effectively measure Smart Grid progress without imposing undue costs or incorrectly directing IOUs' Smart Grid technology evaluation and deployment efforts.

¹³ Ruling, pp. 24-25.

SCE's Proposed Smart Grid Metrics

1. Reliability Metrics – SAIDI
2. Reliability Metrics – SAIFI
3. Reliability Metrics – MAIFI
4. Renewable Resources Integrated - MW of integrated renewable resources (at both Transmission and Distribution levels)
5. AMI Meters Installed - Total Number and as a % of Total
6. Home Area Network Coverage - Number and % of Customers registered to use 1 or more HAN devices
7. Demand Response (bundled customers only) <ul style="list-style-type: none">• Load Control - Total MW of load control resources• Dynamic Pricing - Total MW on dynamic pricing programs
8. Energy Efficiency - GWh of EE Savings
9. Customer Information Access - Number and % of Customers enrolled with utility to access customer usage and pricing data
10. Electric Vehicles - Number of EVs enrolled with utility (on EV Rates/Programs)

With respect to adding cost-effectiveness metrics to the list proposed in the Ruling, SCE (and most of the other parties to this proceeding) stated in opening comments that Deployment Plans should not serve as a vehicle for reviewing the reasonableness of Smart Grid investments. Assessments of the cost-effectiveness of Smart Grid investment should take place in GRC proceedings or other applications. The presentation of cost-effectiveness information and metrics is more appropriate in those forums than in Deployment Plans. This position is consistent with the Ruling's language that including sufficient detail in Deployment Plans to make cost-effectiveness and reasonableness findings "would prove extremely difficult at this time" and could lead to "a proceeding considering a Smart Grid deployment plan ... becom[ing] very contentious and ... quite lengthy."¹⁴

Finally, given the positions stated above, we do not believe a separate workshop to address metrics is necessary at this time.

¹⁴ Ruling, pp. 7-8.

III.

SMART GRID INTEROPERABILITY STANDARDS

In response to the ALJ's remarks in the workshops regarding discussion of standards, we provide below some additional information regarding the status of Smart Grid interoperability standards development. We also provide a more detailed discussion of the Commission's role with respect to standards adoption and implementation in California.

A. Current Status of Smart Grid Interoperability Standards Development

As noted in our opening comments, the National Institute of Standards and Technology ("NIST"), as directed by Congress in the Energy Independence and Security Act of 2007 ("EISA"), is operating a program to prioritize and achieve nationwide industry consensus with respect to Smart Grid interoperability standards. This work by NIST will feed into a rulemaking at the Federal Energy Regulatory Commission ("FERC"); FERC plans to adopt standards after it judges that NIST's work has led to "sufficient consensus."¹⁵

In January 2010, NIST issued the *NIST Framework and Roadmap for Smart Grid Interoperability Standards, Release 1.0* ("Release 1.0").¹⁶ Release 1.0 contains a list of 25 specifications around which NIST indicates "there is strong stakeholder consensus."¹⁷ We anticipate that in mid-May of 2010, NIST will begin releasing a series of standards abstracts, in which NIST will assert that consensus has been reached for a given standard, thereby triggering the EISA-required rulemaking at FERC.

NIST's recommendation of a specific standard to FERC does not necessarily mean that work on that standard is complete, or that it has been ratified by an accredited Standards Development Organization. Standards that require further development are addressed under

¹⁵ EISA, Section 1305.

¹⁶ Available at: http://www.nist.gov/public_affairs/releases/smartgrid_interoperability_final.pdf

¹⁷ NIST Special Publication 1108, "NIST Framework and Roadmap for Smart Grid Interoperability Standards, Release 1.0," p. 61. Please refer to pages 50-60 in the NIST publication for the list of 25 standards described above.

NIST's Priority Action Plans. Release 1.0 lists 15 Priority Action Plans, each addressing specific area of Smart Grid standard development needs. SCE recommends that the Commission address the standards on the NIST list that have reached clear consensus. For those items that have not yet reached national consensus, as is the case with many of the customer Smart Grid interfaces like OpenADE or OpenADR, the Commission should let the marketplace provide resolution before taking action.

B. The Commission's Role in Standards Adoption and Implementation

SCE continues to respectfully recommend that the Commission act in parallel with FERC to adopt standards that are recommended by NIST. We believe, however, that more detailed consideration of standards adoption and implementation by all stakeholders is required. Standards adoption and implementation could serve as an appropriate topic for a third phase of this proceeding.

As discussed above and in our opening comments, FERC's upcoming rulemaking proceeding will not only address adoption of standards, but will also treat enforcement, compliance, and the determination of whether "consensus" has been achieved. This FERC rulemaking will necessarily involve detailed discussions of technical issues and will require more time than is available in the current scoping of Phase II of this proceeding. The issue of adoption alone may be more complicated than it would initially appear. For the Commission to "adopt" a standard for Smart Grid investments, the Commission will also need to specify those investments to which a given standard applies, as well as the mechanisms through which the Commission will enforce compliance with the standard.¹⁸

As a general recommendation, we believe the Commission and the State of California should leverage and follow, rather than replicate, NIST's efforts to organize and prioritize the wide range of Smart Grid standards development efforts underway. This approach will save

¹⁸ We anticipate that NIST's abstracts may provide additional guidance regarding the application of specific standards.

resources and funds, and ensure that California's standards are consistent with those at the national level. Once NIST's first abstracts are released and FERC issues provisional guidance on its related rulemaking, the Commission will be able to take a more concerted and informed approach to standards adoption.

At the same time, the Commission should be aware of the interplay between its mandates and standards development timelines. Standards are an important policy issue because they ultimately minimize costs to ratepayers by ensuring consistency and minimizing transaction costs related to IOUs' Smart Grid deployments. If the Commission mandates that utilities deploy technologies or roll out programs before applicable standards are properly established, the IOUs may be forced to implement solutions that ultimately prove inefficient and duplicative. This could waste ratepayer funds and impose risks of stranding assets.

IV.

CUSTOMER ACCESS TO ENERGY INFORMATION

A. SB 17 Compliance

The Ruling revised the scope of this proceeding to include policy matters assigned to the Commission by the passage of SB 17.¹⁹ SB 17 requires that the Commission take action on Smart Grid issues. However, the Commission does not need to create requirements on issues related to customer access to energy information to comply with SB 17. Specifically, SB 17 requires that the Commission develop the requirements for Deployment Plans by July 1, 2010, but does not mandate any Commission action on customer data access issues.²⁰ Therefore, the Commission can explore customer data issues beyond the July 2010 timeframe.

¹⁹ Ruling, at p. 40.

²⁰ See SB 17, at p. 1.

B. Presentment of Usage Data

Consistent with Commission policy, SCE is committed to providing residential customers with historical hourly usage data on a next-day basis, and near real-time access through the Home Area Network (HAN), as well as providing commercial and industrial customers with similar access to 15-minute interval usage data. These increments were designed to meet the Commission's requirements to support the implementation of price-responsive tariff design structures.²¹

In contrast, Google states that an increased level of data granularity is needed for customers to effectively manage their home energy use.²² Google reiterated their position at the March 19, 2010 workshop. Thus, Google recommends that California IOUs provide usage data to all customers in 15-minute intervals.²³

The Commission should not adopt this requirement for several reasons. First, the Commission has **already** decided that customers should be provided with hourly interval and near real-time usage data to support customers' understanding of usage patterns. The Commission adopted smart meter deployments for SCE, PG&E, and SDG&E based on this guidance.²⁴ Specifically, the Commission determined that AMI systems should support six functions. With respect to interval usage data, the Commission determined that AMI systems should include the "Collection of usage data at a level of detail (interval data) that supports customer understanding of hourly usage patterns and how those usage patterns relate to energy costs."²⁵ Based on this guidance, SCE, PG&E, and SDG&E developed AMI business cases that were each considered in separate proceedings, and adopted as reasonable by the Commission following evidentiary hearings.

²¹ See February 19, 2004 Joint Assigned Commissioner and Administrative Law Judge's Ruling Providing Guidance for the Advanced Metering Infrastructure Business Case Analysis, at p. 3.

²² Google's Opening Comments to Ruling, p. 5.

²³ *Id.*

²⁴ See February 19, 2004 Joint Assigned Commissioner and Administrative Law Judge's Ruling Providing Guidance for the Advanced Metering Infrastructure Business Case Analysis, at p. 4.

²⁵ *Id.*

Second, the Commission also decided that it is reasonable to provide residential customers with near real-time usage data through the HAN.²⁶ Accordingly, SCE, PG&E, and SDG&E have plans to provide near real-time usage data, in approximately ten-second increments, to all residential customers. Further, SCE expects to conduct a pilot program in 2010 to understand the technical challenges and customer behavior impacts associated with the provision of near real-time data via HAN devices. SCE plans to utilize Smart Energy Profile in-home displays that provide near-real time usage data to test, among other things, HAN device connectivity and range capability within customers' homes. In addition, we will develop HAN support knowledge associated with customer installation and device registration. The pilot is expected to yield insights into the overall customer experience and behavioral changes enabled by the presentment of near real-time usage data.

Google has neither demonstrated nor quantified any incremental customer benefits associated with 15-minute incremental data versus the combination of hourly incremental data and near real-time usage that has already been approved by the Commission. If the Commission now believes that 15-minute incremental usage data may be desirable, then consistent with the Commission's adopted framework for evaluating AMI investments, studies should be performed to determine that the customer benefits of providing such information exceed the incremental costs incurred by the IOUs and ultimately paid for by consumers.

Also, because current AMI systems are not designed to collect 15-minute interval data, the network system throughput, data storage, and customer presentment aspects for each IOU would need to be re-evaluated. SCE expects that the incremental costs of moving from hourly to 15-minute interval data may be significant. The IOUs would need to compare the costs with the quantified benefits to establish if there is a net customer benefit. Such analysis would need to be evaluated as part of a separate proceeding or separate phase of this proceeding.

²⁶ See Decision Approving Settlement on Southern California Edison Company Advanced Metering Deployment (D.08-09-039), at p. 45.

The Environmental Defense Fund (EDF) recommended in its opening comments that utilities provide additional types of usage data beyond standard kWh usage information. Specifically, EDF recommends that third parties have access to usage, voltage, current, kVar, power factor, frequency, and other information measured at the meter.²⁷ Edison SmartConnect™ meters measure and communicate to SCE’s back office systems usage, demand, and meter event data.²⁸ SCE’s back office systems also calculate customers’ demand. This is information that the Commission has already determined is appropriate to be collected by the Edison SmartConnect meters.²⁹ Any refinement or expansion of the data collected by the meters may result in cost increases and would require further analysis by the IOUs and the Commission.

C. Presentment of Retail and Wholesale Pricing Data

In D. 09-12-046, the Commission found that EISA does not require any Commission action on customer data access because “prior Commission actions on implementing information disclosure policies in the context of the utilities’ advanced metering initiatives constitute a ‘prior state action’ pursuant to [EISA], and make further action unnecessary to fulfill EISA requirements.”³⁰ However, the Commission committed to examining the merits of requiring the utilities to provide real-time or near real-time pricing, in order to support the Commission’s demand response and dynamic pricing policies, as well as national policy, the general public interest, and state privacy rules.³¹

Specifically, in D. 09-12-046, the Commission established policy objectives to identify low-cost or no-cost methods to provide near real-time retail and wholesale prices to customers on a real-time or near real-time basis in a “machine-readable” form consistent with any NIST

²⁷ See EDF’s Opening Comments to Ruling, at p. 12.

²⁸ Meter event data includes configuration changes, power outage, service switch operations, home area network events, and voltage events.

²⁹ See Decision Approving Settlement on Southern California Edison Company Advanced Metering Deployment (D.08-09-039), Findings of Fact 20, at p. 57.

³⁰ See D.09-12-046, Conclusion of Law 13.

³¹ See *id.*, Section 5.1.3.

standards; estimate the costs of implementation and designate a cost recovery method; and implement the low-cost or no-cost methods by the end of 2010, consistent with NIST standards.³² The Commission initiated workshops in this Rulemaking to identify any such methods.

At the March 19, 2010 workshop and in our opening comments, SCE stated that, given the current tiered rate structures in California, providing near real-time pricing data to residential customers may cause customer confusion, and could even have the perverse effect of increasing overall electricity usage by customers. Thus, the Commission should conclude that providing near real-time pricing data to residential customers is not, at this time, practicable or meaningful in the context of the Commission's demand response and dynamic pricing policies. Further, the Commission should consider reasonable alternatives to providing customers with near real-time retail prices, at least until such time that the tiered rate structures are no longer in effect.

This position is supported by DRA, TURN, and CLECA, who noted that the intent of providing price data to customers should be to provide useful information to help customers manage their electric bills. Specifically, DRA noted at the March 19, 2010 workshop that customers need an understanding of usage and pricing as it relates to the entire billing period.³³ TURN also states that "the Commission should focus at this moment on using the AMI system to deliver information to customers that can be used immediately, and broadly, to help customers conserve energy and save money."³⁴ Furthermore, CLECA states "sending price information that is useful requires a better focus on providing customers with clear, understandable bills and understandable, actionable prices."³⁵

SCE proposes to provide such actionable pricing information in late 2010 through bill-to-date, Bill Forecast, and optional alerts³⁶ to customers with Edison SmartConnectTM meters.³⁷

³² See *id.*

³³ Hieta, Karin. Smart Grid Workshop – Access to Electricity and Prices. San Francisco, CA. March 19, 2010.

³⁴ See TURN's Opening Comments to Ruling at p. 24.

³⁵ See CLECA's Opening Comments to Ruling at p. 7.

³⁶ Bill-to-date functionality will use the electricity usage at any point during the billing period to estimate the customer's cumulative dollar cost. Bill Forecast will also use the electricity usage at any point during the

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This information will provide customers with relevant, actionable information that can help them manage their energy usage. TURN and Google also support the provision of such functionalities. TURN stated, “[n]otifying customers electronically (by robocall or email) within 24 hours of when their usage crosses into the next tier during the course of the month is exactly the kind of information... to empower customers to both save energy and money.”³⁸ Google also stated, “[a]utomated alerts delivered via email, phone, or text messaging can alert customers to when they may be transitioning to higher rate classes.”³⁹

Thus, SCE recommends that in the near term while AB1X restrictions are in place, the Commission consider the provision of pricing information through bill-to-date, Bill Forecast, and tier alert functionality, as reasonable, practicable and meaningful alternatives to the presentment of near real-time retail prices. In addition, the Commission should re-evaluate the near real-time presentment of retail prices when AB1X expires, assuming that rates structures better reflect marginal costs and/or system conditions.

Furthermore, SCE supports CAISO’s position expressed at the March 19, 2010 workshop that system conditions should be communicated to customers via pricing signals and by other means as an alternative to providing customers with near real-time wholesale price information. Retail prices are not directly tied to fluctuations in wholesale electric market prices, and as TURN noted in its opening comments, customers are unlikely to have the capability to respond to wholesale prices as current tariffs are not based on wholesale prices.⁴⁰ IOUs already provide a proxy of wholesale prices through dynamic pricing and demand response programs. As an alternative to the presentment of near real-time wholesale prices, the Commission should

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billing period to forecast an estimate of the customer’s cost at the end of the billing cycle. Customers will also be able to enroll in optional alerts, which will notify customers by voice, text, or email when they exceed their preset budget amount.

³⁷ See SCE’s Opening Comments to Ruling at p. 15.

³⁸ See TURN’s Opening Comments to Ruling, at p. 25.

³⁹ See Google’s Opening Comments to Ruling at p. 3.

⁴⁰ See TURN’s Opening Comments to Ruling at p. 23.

consider allowing the IOUs and CAISO to work jointly in the Demand Response proceeding to further refine the pricing signals to develop a more effective correlation with wholesale prices.

D. Statewide Centralized Data Storage and Access

The Ruling proposed third party data access rules modeled on Rule 22 and rules adopted by the Public Utilities Commission (PUC) of Texas.⁴¹ Furthermore, the Texas PUC required the development of a centralized Texas database to store and provide third party access to energy usage information. The centralized Texas database, or Smart Meter Texas, was described in detail by CenterPoint Energy at the March 19, 2009 workshop. In reference to the Texas database, Google recommends developing a statewide centralized database in California.⁴²

While a statewide, centralized database that provides third parties with access to customer usage data is an intriguing concept, SCE questions the practicality of building such a database in California given the different market structure and incremental implementation and operating costs. SCE also notes that since the Commission does not have jurisdiction over the publicly-owned utilities, any database would not be truly statewide and therefore the value is significantly diminished compared to Texas. Also, each of the IOUs has already or have substantially completed their smart meter customer databases.

As TURN notes in its opening comments, there are significant differences in the electric market structure in Texas and California.⁴³ In Texas, the retail energy market is completely deregulated. Customers may choose to buy their electricity from a number of retail electricity providers (REPs). These REPs have a direct retail relationship with customers, but do not have access to the customer usage data through the meter. Collecting customer usage data is the responsibility of transmission and distribution service providers, who collect this data through their AMI systems and provide the data to REPs through the centralized database. This market

⁴¹ See Ruling, at Attachment B.

⁴² See Google's Opening Comments to Ruling, at p. 6.

⁴³ See TURN's Opening Comments to Ruling, at p. 12.

structure makes a centralized database useful in Texas. California IOUs, however, already own the systems to collect customer usage data and have a full retail relationship with those customers who do not participate in direct access.

As such, SCE already has the capability to collect customer usage data and expects to provide customers and/or their authorized third parties with access to data through the OpenADE process and existing back office systems. In fact, SCE is planning a pilot with a third party vendor to test the OpenADE data exchange process. In this pilot, SCE will test the transmission of customer usage data to the third party based on customer request and approvals.⁴⁴ This pilot will be critical to test the capabilities of the OpenADE process and to prepare SCE to provide data to customers and their authorized third parties, consistent with NIST standards. The pilot will leverage SCE's back office systems and databases which already transmit customer usage information to customers and Electric Service Providers (ESPs). The development of an additional statewide centralized database will duplicate existing functionality currently under development by all three IOUs.

A cost-effectiveness analysis should be performed before committing California ratepayer funds to build a centralized database. Prior to committing ratepayer funds, California should also obtain a clear understanding of the actual performance of the Texas model. Further consideration should also be given to whether participation and partial funding should be mandated for California municipal and publicly-owned utilities.

E. Privacy and Security

The opening comments of parties articulate a number of privacy concerns regarding the interval usage data made available to the utilities through their smart metering systems and the data accessible by customers and their third-party agents directly at the meter through smart grid technologies, such as the HAN and smart appliances. Information available directly at the meter

⁴⁴ The pilot will only utilize test data, and will not include any confidential, customer-specific data.

is of particular concern for several parties in their opening comments because this information may have significant value to commercial interests and law enforcement agencies. Parties express concern that customers may not be sufficiently aware of the type of information made available through the smart grid and its value to third parties to whom customers may authorize access, thus increasing the potential for misuse of customer data.

Parties propose a number of ways to address customer privacy concerns, including prohibiting the transfer of personal data and authorizing the collection of only the minimal data necessary for a particular purpose;⁴⁵ implementing Fair Information Practices (FIP) principles as part of the utilities' Deployment Plans;⁴⁶ mandating subpoenas for law enforcement access;⁴⁷ limiting data use and/or subsequent release by third parties;⁴⁸ and requiring the utilities to enforce customer-authorized third parties' compliance with privacy laws.⁴⁹ As discussed below, SCE agrees that FIP principles should be included in the utilities' privacy policies. The utilities, however, should not be required to enforce customer-agents' compliance with federal and state privacy laws.

1. SCE Agrees that Fair Information Practices Principles Should be Incorporated into the Utilities' Privacy Policies

SCE agrees that the increased information on utility customers made available through smart grid technologies raises privacy concerns that must be appropriately addressed by this Commission and the utilities to safeguard customers' confidential personal or business information and privacy interests. SCE submits that sufficient safeguards exist today for customer-confidential information collected by the utilities -- including statutes and Commission

⁴⁵ See, e.g., TURN's Opening Comments to Ruling, pp. 20-21.

⁴⁶ See, e.g., DRA's Opening Comments to Ruling, pp. 15-16; CDT and EFF's Opening Comments to Ruling, pp. 14-25; UCAN's Opening Comments to Ruling, pp. 39-42; Privacy and Cybersecurity Law and Policy Researchers' Opening Comments to Ruling, pp. 2, 6-9.

⁴⁷ See TURN's Opening Comments to Ruling, pp. 7-8, 21.

⁴⁸ See, e.g., TURN's Opening Comments to Ruling, pp. 12, 15-20.

⁴⁹ See CDT and EFF's Opening Comments to Ruling, pp. 28-29; TURN's Opening Comments to Ruling, pp. 15-20; DRA's Opening Comments to Ruling, p. 15; UCAN's Opening Comments to Ruling, p. 32.

mandates to maintain the security and confidentiality of such data and release it only upon written customer authorization, court-ordered subpoenas, or as otherwise required by law. SCE, however, agrees that certain parties' proposals can increase the transparency regarding the types and uses of information collected by the utilities.

Specifically, SCE agrees that FIP principles provide useful guidance for utilities' treatment of customer data derived from Smart Grid systems. SCE suggests that the Commission order the IOUs to incorporate the Federal Trade Commission's (FTC) FIP principles into the IOUs' privacy policies, and submit those privacy policies for review by the Commission as part of a compliance advice filing. To the extent the IOUs' respective privacy policies already incorporate the FTC's FIP practices, the compliance advice filings would simply provide a means for the Commission to ensure consistency in the IOUs' approaches to the FIP principles.

2. The Utilities Should Not be Required to Enforce Customer-Agents' Compliance with Federal and State Privacy Laws

SCE submits that the Commission should reject any proposal that imposes on the utility a duty to enforce the compliance of customer-authorized third parties with state and federal privacy laws in their use of customer data. The utility does not enter into contracts with customer-authorized third-party agents, as some parties appear to have incorrectly assumed.⁵⁰ There is no legal or contractual relationship between the utility and a customer's third party agent beyond a release of liability the third-party agent (and the customer) must provide as part of the customer's authorization to the utility to release confidential customer data to its third-party agent.

The utility does not elect to transact business with any particular customer-authorized third party – it is solely the customer's choice as to whom the customer authorizes to access its data. The utility (appropriately) has no say in the customer's selection of third-party

⁵⁰ See, e.g., TURN's Opening Comments to Ruling, pp. 15-20; CDT and EFF's Opening Comments to Ruling, pp. 28-29; DRA's Opening Comments to Ruling, p. 15.

agent. The utility has no ability to control or interfere with the customer's relationship with its third-party agent. As such, the utility cannot reasonably enforce privacy law compliance by customers' third-party agents. Imposing such a duty on the utility would unfairly place enormous risk on the utility and its ratepayers for the actions of third parties with whom the utility has no legal or business relationship.

If the utility were required to fulfill a privacy law enforcement role over customer-authorized third-party agents, the only reasonable way for the utility to mitigate the enormous associated risks would be stop releasing data to customer third-party agents, and to release the data directly and solely to the utility's customers.

If customers are to continue to have the a right to direct the utility to release customer-specific data to third-party agents of the customer's choosing at the customer's authorization -- a practice that most, if not all, parties in this proceeding have supported -- then customers must be responsible for monitoring and controlling the use of the data by their authorized agents. The utilities can be instrumental in educating customers about the legal obligations that third parties have with respect to use of customer data, and the importance of customers transacting business with reputable entities that have appropriate privacy policies and FIP practices in place.

The utilities can also provide customers with information on how they can seek redress for suspected misuse of their data by third-party agents, including filing complaints with the California Office of Privacy Protection, the Federal Trade Commission, and/or the courts. The courts and state and federal agencies tasked with consumer and privacy protections are the appropriate enforcers of privacy laws.

Several parties assume that the Commission has no jurisdiction over third parties that offer IOU customers services in exchange for access to customer usage and other data.⁵¹ SCE respectfully disagrees. The Commission has jurisdiction to enforce certain consumer

⁵¹ See DRA's Opening Comments to Ruling, p. 15. *But see* UCAN's Opening Comments to Ruling, p. 33; CDT and EFF's Opening Comments to Ruling, p. 3 and Section III.

protections against all providers of electrical services in the IOU service areas pursuant to Section 394 *et seq.* of the California Public Utilities (“P. U.”) Code.⁵² To the extent the Commission finds that existing state or federal agencies tasked with enforcing consumer privacy protections do not possess adequate jurisdiction to protect IOU customer privacy when a third party collects customer data (either at the meter or from the utility at the customer’s authorization) and makes subsequent use of that data, the Commission should consider filling any regulatory gap. The Commission can do so by enforcing the consumer protections in P.U. Code Section 394 *et seq.* over third parties that offer electricity-related services to IOU customers in exchange for access to customer usage and other data.

V.

CYBERSECURITY

We would like to briefly address a remark by the Granite Key Company during public comments in the March 18 workshop. As SCE described in its opening comments and reiterated in the workshop, SCE believes that cybersecurity is a foundational element of all Smart Grid systems. We view cybersecurity as a critical policy area for the Commission. SCE evaluates cybersecurity risks through an extensive threat assessment that drives requirements (using a systems engineering approach), and conduct extensive evaluations of cybersecurity technology. We believe the need exists for independent product certifications and a national vulnerability and

⁵² In Article 12 of Chapter 2.3 of the P.U. Code, entitled “Consumer Protections,” the legislature gave the Commission specific jurisdiction over electrical services providers for consumer protections, particularly for residential and small commercial customers. Such jurisdiction includes registration; authority to determine financial viability; authority to implement minimum standards for consumer protection, including confidentiality of customer information, written notice of terms and conditions of service, changes in providers, and any “additional residential and small commercial consumer protection standards that are in the public interest;” authority to accept and resolve complaints regarding, and initiate investigations into, consumer abuses if warranted; and authority to maintain and enforce a no-solicitation list. The definition of an electric service provider for consumer protection purposes is, in SCE’s view, sufficiently broad to encompass third parties offering IOU customers services that require access to their customer usage and other data. *See* Section 394(a) of the P.U. Code.

incident response clearinghouse. SCE has specifically dedicated resources towards developing national requirements and standards in partnership with NIST, DoE and EPRI. SCE has also developed a framework for the role of regulators and other key stakeholders with respect to cybersecurity. GraniteKey agreed with SCE's view described above in the same workshop.

SCE's "A Lifecycle Framework for Self-sustaining Implementation of Smart Grid Interoperability and Cyber Security Standards" (attached as Appendix A to this document) outlines four specific roles for state and federal regulators in the area of cybersecurity:

1. Define performance criteria in the context of meeting public policy objectives. California's "six criteria" for advanced metering is one example.
2. Provide oversight on utility expenditures and enforce interoperability and cybersecurity standards adoption.
3. Ensure utility participation in a centralized incident response effort.
4. Refine performance criteria based on continuous improvement.

VI.

CONCLUSION

SCE continues to look forward to working with the Commission, fellow utilities, and other parties to fulfill our year 2020 vision to modernize the grid to deliver a cleaner energy supply from renewables and integrated distributed resources, energy-smart consumer devices, and electric vehicles while improving reliability, safety, and cost-effectiveness. SCE respectfully requests that Phase II of this proceeding be structured in accordance with SCE's opening comments filed on March 9, 2010 and its reply comments as set forth herein.

Respectfully submitted,

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/s/ Kris G. Vyas

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April 7, 2010

Appendix A

Cyber Lifecycle Whitepaper

A Lifecycle Framework for Self-sustaining Implementation of Smart Grid Interoperability and Cyber Security Standards

Introduction

Advancing Smart Grid interoperability and security through standards adoption fosters innovation and accelerates robust, secure and reliable Smart Grid deployments. This is achieved by lowering the barriers to entry for vendors; accelerating secure and interoperable product time to market; and ultimately lowering costs for consumers. With all the potential benefits associated with broad standards adoption it seems reasonable to institute a standards lifecycle framework to ensure the deployment of a robust and interoperable Smart Grid. Unfortunately, realizing the benefits of standardization requires more than just selection of a standard.

Several papers in circulation including papers developed by EnerNex¹ and EPRI² show that there are plenty of standards available. With so many available standards, why has the pace of adoption been slow? The answer is that the selection of a standard is but one aspect of a greater product lifecycle. Full realization of the benefits will require a shared government and industry focus on a common set of Smart Grid functions, and a standards lifecycle framework supporting those functions. The goal of this standards lifecycle framework is to align policy, standards development, product development and procurement actions to create a self-sustaining Smart Grid market. A successfully operating, self-sustaining Smart Grid product market is defined by public policy supported by standards that are rapidly adopted by product vendors seeking certification, and driven by utility procurement agents only buying products certified to those standards. The effect in the market place is that product vendors are incented to compete against each other to create products that are increasingly interoperable and secure. Within this context, it is clear that any approach needs to be comprehensive and cohesive.

Beyond the creation of a standards lifecycle framework, it should also be noted that the associated effects of validation, enforcement, certification and accreditation are missing or in need of additional support. Certification and enforcement are critical elements of the lifecycle. Certification defines test cases that clarify standards interpretation in products by vendors. In this manner, any ambiguity in standards interpretation is quickly identified and remedied in such a closed loop process. Without such a process, vendors will interpret standards differently and interoperability will not be achieved.

This holistic approach to standards adoption allows for a more inclusive stakeholder representation. Achieving increasing levels of interoperability and robustness will require a concerted effort by all stakeholders including regulators, government agencies, utilities, vendors, commercial organizations and standards development organizations. These interests can be represented through a look at the applicable development and adoption lifecycles and how these lifecycles intersect. Two of the most relevant lifecycles are the procurement lifecycle and the

¹ Smart Grid Standards Assessment and Recommendations for Adoption and Development, draft v0.82, EnerNex for California Energy Commission, February, 2009

² EPRI Technical Report: Integration of Advanced Automation and Enterprise Information Infrastructures: Harmonization of IEC 61850 and IEC 61970/61968 Models, EPRI, Palo Alto, CA 2006. Product ID 1013802.

standards development lifecycle. These two lifecycles are significant in that they cover both the development of the products and standards and the adoption and enforcement of the standards.

Standards Development Lifecycle

The standards development lifecycle is the realization of an operational need through the articulation of the need, followed by the development of standards, certification processes, and implementation validation. The standards process is better served when the organizations needing to procure the products are involved in this needs development. In the case of Smart Grid, these organizations are mostly utilities. Needs are typically represented through business objectives, use cases and requirements. These needs should be the basis for both platform agnostic and platform specific standards development. The process for establishing and representing the needs through standards is well established and actively practiced in the utility industry.

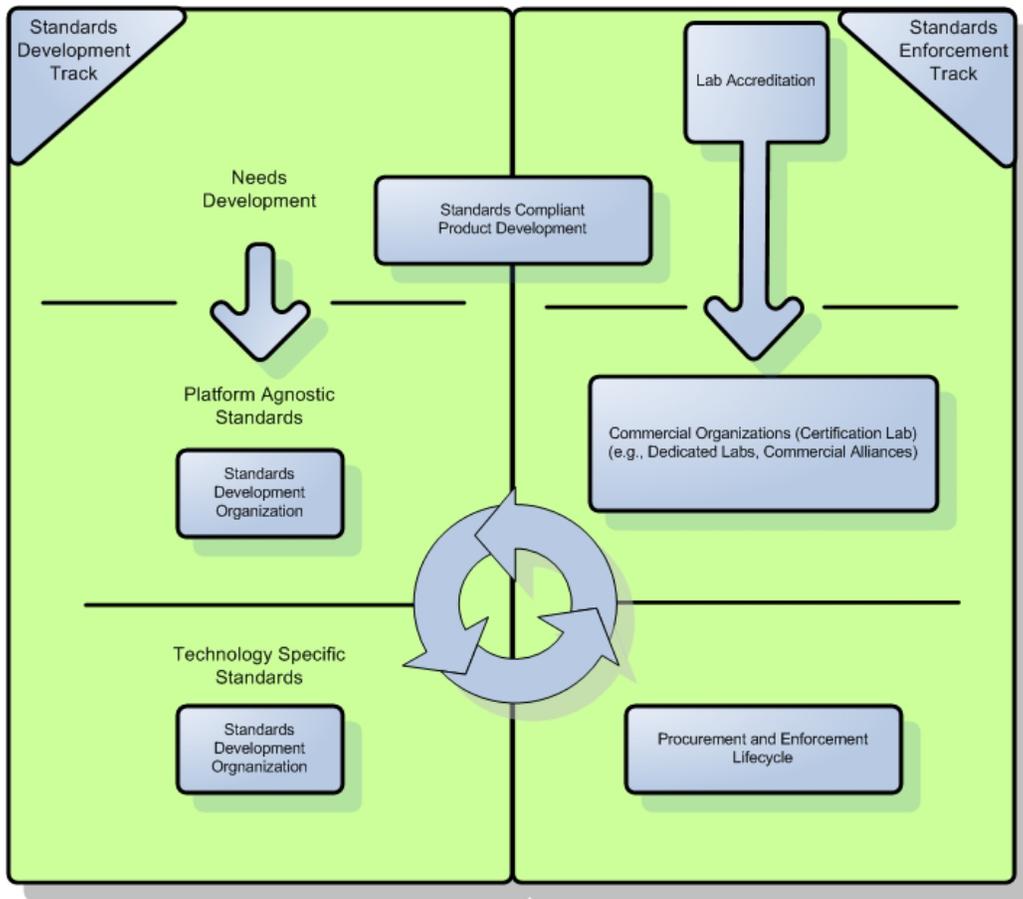


Figure 1: Standards Development Lifecycle

As shown above in Figure 1, the standards development lifecycle does not end with the development of the standard; this is simply the starting point. The standard needs to be implemented, validated and adopted. In most cases where standards are available but not widely used, the fault is not with the development of the standard but rather with the enforcement of the standard. Fortunately, normal competitive market drivers can be used to enable this piece.

Commercial organizations chartered to validate vendor implementations claiming to be compliant with a given standard are needed. These organizations play a critical role in the overall adoption of a standard. There are several commercial organizations currently providing certification services including ZigBee, HomePlug, Wi-Fi, and WiMAX. While the communications space is well served by these organizations, other domains have no commercial equivalent. As an example for the electric grid, there are no commercial security certification organizations. Utilities and other organization have developed security related needs statements and there are many security standards. Again, because there is no certifying organization the lifecycle is broken and the standards adoption becomes ad-hoc. Closing the loop with a certification process is a key to accelerating mature standards. In doing so, interoperability issues are discovered and regressed into the standards and the technologies. Without this closed loop process, interoperability is almost impossible to achieve on a broad system spanning multiple vendors.

Ultimately, adoption is achieved through the procuring organization. The utilities procure devices which extend and enhance the capabilities of the electric grid. Using security as an example, devices which are certified as more robust or more secure will be procured over competing devices offering less robustness or security. In this way, both the utilities and the vendors have the necessary incentives to foster a sustainable Smart Grid ecosystem.

Procurement-driven Standards Lifecycle Framework

The standards development process relies on the utility procurement lifecycle for enforcement. This lifecycle also provides other key touch points with the standards development lifecycle beyond the final enforcement of a given standard. These touch points give visibility and provide context for participation of various stakeholders. The utility procurement lifecycle, at its core, is concerned with procuring products which meet a given set of criteria. These criteria include regulatory policy, operational needs and business functionality as well as any standards compliance requirements. Regulators and standards organizations support the utility procurement process at several points in the lifecycle.

Regulators at both the state and federal level can provide four key roles in the lifecycle.

1. Define performance criteria in the context of meeting public policy objectives. California's "six criteria" for advanced metering is one example.
2. Provide oversight on utility expenditures and can enforce interoperability and cyber security standards adoption.
3. Ensure utility participation in a centralized incident response effort, and
4. Refine performance criteria based on continuous improvement.

Continuing with the security example, the procurement lifecycle merged with the standards development lifecycle to create a procurement-driven, cyber security standards lifecycle framework, as shown in figure 2 below, provides for a more consistent and more secure electric grid. In fact, enabling the entire lifecycle is the only way to increase security capability across the entire grid.

As part of this standards lifecycle framework, various industry stakeholders are able to define operational needs within the context of regulatory objectives. These needs are carried into standards development by utilities and vendors, evaluated for risk and used to seed various technology agnostic and technology specific standards development by standards development organizations (SDOs). The resulting standards can be recognized by federal and state regulators as meeting policy objectives. While standards development is often described as a long arduous

process, today Smart Grid development can benefit from the many existing standards available. The current potential to accelerate standards adoption is described in the “Smart Grid Standards Adoption - Utility Industry Perspective”³ whitepaper.

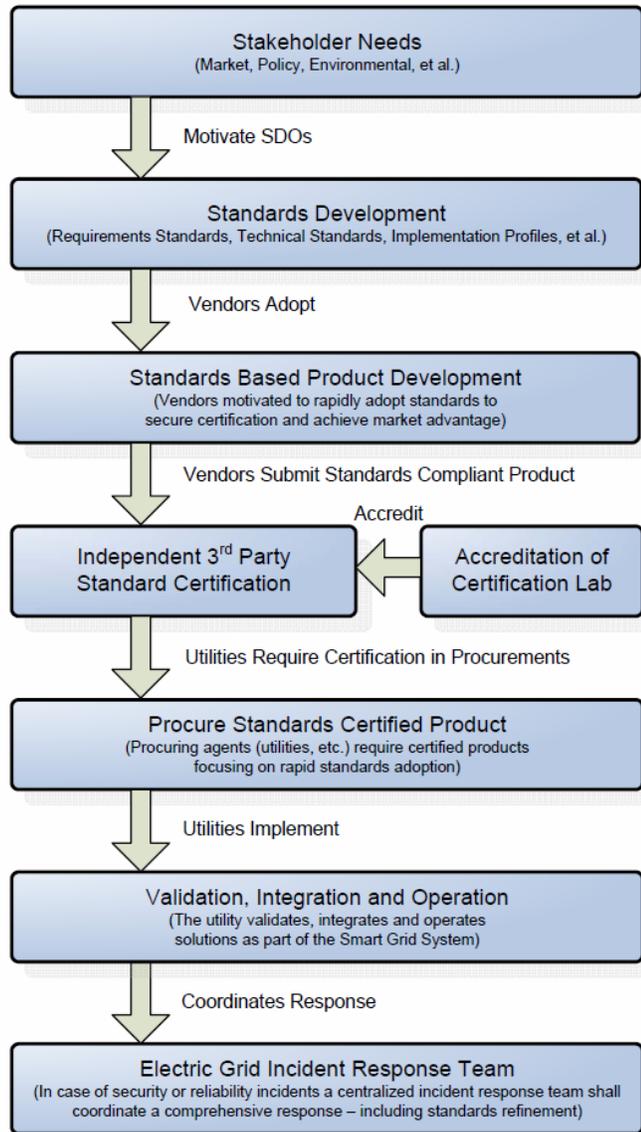
As this lifecycle framework continues, products are developed by manufacturers and software developers and evaluated for standards compliance certification by independent commercial labs, which have been accredited by a governmental agency such as NIST.

Devices/software are then procured by the utility for implementation. During the course of utility operations, performance information is gathered, new threats are identified, and knowledge is shared. Any security risk that is realized is responded to by a central incident response team which coordinates the response to the security event. Again, using the touch points across the standards lifecycle framework, the industry is able to transfer this security knowledge to the appropriate organizations.

Conclusion

Lower product costs, operational costs, and improved resiliency are significant benefits associated with standards adoption. In order to truly realize these benefits, the entire product lifecycle needs to be considered. There are two complimentary views of this lifecycle, the first view is the standard lifecycle, and the second is the procurement lifecycle. Certification is a key component of the lifecycle and without certification the cycle is broken and the ability to achieve broad interoperability is negated. These lifecycles should be unified by a comprehensive standards lifecycle framework described above. This more holistic view also clearly identifies the roles for key stakeholders’ participation. For the energy sector, enabling and enhancing, this standards lifecycle framework should be the primary goal.

Figure 2: Cyber Security Standards Lifecycle Framework



³ Smart Grid Standards Adoption - Utility Industry Perspective v5.0, by Utility Smart Grid Executive Working Group and Open SmartGrid, March 23, 2009

CERTIFICATE OF SERVICE

I hereby certify that, pursuant to the Commission's Rules of Practice and Procedure, I have this day served a true copy of SOUTHERN CALIFORNIA EDISON COMPANY'S (U 338-E) REPLY COMMENTS TO ASSIGNED COMMISSIONER AND ADMINISTRATIVE LAW JUDGE'S JOINT RULING AMENDING SCOPING MEMO AND INVITING COMMENTS ON PROPOSED POLICIES AND FINDINGS PERTAINING TO THE SMART GRID on all parties identified on the attached service list(s). Service was effected by one or more means indicated below:

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/s/ Raquel Ippoliti
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