BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

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.	R08-12-009 (Filed December 18, 2008)

REPLY COMMENTS OF CISCO SYSTEMS, INC. ("CISCO") REGARDING THE PROPOSED DECISION OF PRESIDENT PEEVEY ADOPTING RULES TO PROTECT THE PRIVACY AND SECURITY OF THE ELECTRICITY USAGE DATA OF THE CUSTOMERS OF PACIFIC GAS AND ELECTRIC COMPANY, SOUTHERN CALIFORNIA EDISON COMPANY, AND SAN DIEGO GAS & ELECTRIC COMPANY

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I. INTRODUCTION

Pursuant to Rule 14.3 of the Commission's Rules of Practice and Procedure, Cisco Systems, Inc. ("Cisco") appreciates the opportunity to file these reply comments in response to the Proposed Decision of President Peevey. Cisco, headquartered in San Jose, California, delivers an end-to-end, Internet Protocol (IP)-based, secure communications infrastructure for the smart grid from generation, transmission and distribution to businesses and homes and is actively participating in global standards development. Cisco is focusing its reply comments[1] to the proposed Home Area Network (HAN) pilots and the development and implementation of open and interoperable standards.

II. BENEFITS OF OPEN, INTERNET PROTOCOL (IP)-BASED SMART GRID ARCHITECTURE

Cisco supports the proposed decision's call for the three utilities to commence pilot studies within six months to connect HAN-enabled devices to Smart Meters. We believe the pilots would enable utilities to implement innovative smart grid solutions, empowering customers to make informed choices that can lead to greater efficiency and reliability for California's electric system.

While Cisco recognizes the nascent stage of standards development and the potential for technology risk, near-term customer benefits can be achieved through careful planning and an understanding of technology evolution, minimizing the potential for stranded costs of a future system-wide roll-out. Many of today's technologies were unimaginable when the Commission's AMI rulemaking ordered utility deployment business cases in late-2004. At that time, Facebook was being launched in a Harvard dorm; yet today, over 500 million people use the site. The

[1] Cisco is a member of the Demand Response Smart Grid Coalition (DRSG), however, in this instance we do not agree with their comments regarding the HAN pilots and related standards and offer our comments instead.

iPhone was introduced in 2007, two years after the initial AMI decision. Social media and smart phones represent much of how consumers interact and engage with services firms and now with electric vehicles. The pace of innovation poses a constant challenge to policy makers in matters involving the development of a smarter grid and interface with consumer products.

The ability to support rapid changes in consumer technology and social networking requires that Internet Protocol (IP)-based technologies be deployed at the consumer interface with utilities and markets. The use of IP-based technology in all other industries throughout the history of the Internet has enabled tremendous innovation and customer value. It has also shown resilience to technology change through the application of the IP protocol suite. This is why Cisco, utilities and smart grid technology suppliers around the world are migrating to open architectures and open standards that enable innovation on the pace and scale of consumer electronics and Internet services. Open standards leveraging IP are critical to effective smart grid deployment.

III. CISCO SUPPORTS HOME AREA NETOWKRING (HAN) PILOT, RECOGNIZING STANDARDS MIGRATION

Cisco believes that the proposed HAN pilots should move forward, with the understanding that a graceful migration to a more customer-friendly, IP-based solution will be necessary when products are commercially-available. As a technology provider, Cisco emphasizes that as a policy matter, we do not support government mandates of specific technologies. Rather, we believe that utilities and consumers should be allowed to choose the technologies that best-suit their needs. Cisco is not alone in that opinion and in fact, George Arnold, National Coordinator for Smart Grid Standards at the National Institute of Standards and Technology (NIST) made a similar statement in the current Federal Energy Regulatory

Commission (FERC) Smart Grid Interoperability Standards proceeding, as did the vast majority of respondents[2].

Given the ongoing standards discussions, a HAN-to-smart meter pilot this year would likely utilize the ZigBee Smart Energy 1.x (ZE1) technology. ZE1 is a closed, proprietary protocol and therefore, isn't compatible with the open, IP-based SE2. Further, while California investor-owned utility electric smart meters have the computing hardware to accept a software upgrade to SE2[3], many consumer products do not. This means that if ZE1 products were to be mass deployed, given that the application-layer technology can only run on ZigBee proprietary wireless technology tied to a particular technology stack, consumers face the potential for stranding assets or additional costs upon migration and for consumer dissatisfaction. For this reason, Cisco cautions against calls, like that by the Demand Response and Smart Grid (DRSG) Coalition, for immediate mass-deployment of ZE1 technology.

The recent inability of the ZigBee Alliance (ZA) to move forward on approval of the IP-based Smart Energy Profile 2.0 (SE2) application specification has exacerbated the situation. Cisco and other global stakeholders – including policymakers, utilities, technology suppliers and key organizations, including Homeplug and WiFi alliances – expect ZA to recognize their responsibility as stewards of a transport-agnostic application specification and the demands of the consumer marketplace. In particular, Cisco and others have offered recommendations to ZA that would address the need for greater stakeholder participation (including WiFi and Homeplug Alliances more directly), transparency and accountability for SE2 development. Changes to the governance of SE2 development is a requirement to move forward effectively and expeditiously. Cisco believes that ZA recognizes the need and will take the necessary steps to facilitate the

[2] FERC Smart Grid Interoperability Standards Docket No. RM11-2-000

[3] PG&E comments, "Because of the flexibility of the SmartMeter technology deployed in PG&E's territory, PG&E is well positioned to avoid being locked into a higher cost, lower flexibility and proprietary platform such as SEP 1.x that could be problematic to scale in the retail channel and may not meet the requirements of the National Institute for Standards & Technology (NIST) Smart Grid Interoperability Panel (SGIP)."

process in a manner consistent with the 2007 Energy Independence and Security Act (EISA) requirement for consensus in standards development for those standards identified by NIST or adopted by FERC.

Also, Cisco – with others – offered a technical solution framework to help resolve the technical issues that resulted in the recent failed vote. Based on industry feedback it would appear that technical resolution is achievable in the very near-term, under a revised governance model. As such, Cisco anticipates that SE2 would be commercially-available in consumer products in 2012, consistent with Southern California Edison's comments. It may take another year to fully deploy smart meter interfaces by California utilities. We have attached a notional timeline of the proposed SE2 development schedule to this reply.

Cisco does support the backward-compatibility principle, defined by the National Association of Regulatory Utility Commissioners (NARUC) in its comments in the current FERC proceeding on Smart Grid Interoperability Standards: "Since the standards are being deployed simultaneous to and in some cases subsequent to smart meter roll outs and other smart grid investments, it is essential that new standards provide backward compatibility, or at least a bridge standard to ensure interoperability and avoid disadvantaging early adopters."

The Commission's proposed decision thoughtfully utilizes pilots and allows for utilities to develop and execute on a reasonable technology risk management plan, thereby limiting stranding. Additionally, a variety of commercially-available solutions would enable pilots to move forward without the need for extensive utility back-end systems deployments or lock-in to a particular standard, enabling remote upgrade of consumer devices while minimizing stranding. Full deployment of the Commission's vision for pervasive AMI infrastructure beyond that needed for meter data management requires complex implementation of back office systems.

Extending back-end systems and securing interfaces with potentially tens of millions of consumer devices are not trivial tasks. Cisco's recent Virtual Networking Index report forecast the number of Internet devices to grow to 25 billion in 2015 – about 4 devices for every person in the world[4].

Another benefit of the proposed pilots starting with ZE1 is that it allows the utilities time to prepare for a mass deployment of SE2 that involves implementing Common Information Model (CIM) standards-based systems which is necessary for SE2, but also leads the way to other smart grid applications and standards based on the CIM.

IV. CONCLUSION

Cisco appreciates the opportunity to comment on this proceeding and looks forward to working with the CPUC and other stakeholders on these important issues.

Respectfully submitted,

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[4] *See* http://www.cisco.com/en/US/solutions/collateral/ns341/ns525/ns537/ns705/ns827/white_paper_c11-481360_ns827_Networking_Solutions_White_Paper.html- last accessed on June 7, 2011.

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 **REPLY COMMENTS OF CISCO SYSTEMS, INC. ("CISCO") REGARDING THE PROPOSED DECISION OF PRESIDENT PEEVEY ADOPTING RULES TO PROTECT THE PRIVACY AND SECURITY OF THE ELECTRICITY USAGE DATA OF THE CUSTOMERS OF PACIFIC GAS AND ELECTRIC COMPANY, SOUTHERN CALIFORNIA EDISON COMPANY, AND SAN DIEGO GAS & ELECTRIC COMPANY,** on all parties identified on the attached official service list for Proceeding R. 08-12-009.

Service was completed by electronic copy on e-mail address of record.

Executed on June 8, 2011 at Washington, DC.

Cisco Systems, Inc.

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