



**Ted M. Reguly**  
Director, Smart Meter

101 Ash Street, SD1171  
San Diego, CA 92101

Tel: 858-541-5700  
Fax: 858-541-5592  
TReguly@semprautilities.com

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**Via email to [ccst@ccst.us](mailto:ccst@ccst.us)**

California Council on Science and Technology  
1130 K Street, Suite 280  
Sacramento, California 95814

**Re: SDG&E comments on January 2011 smart meter report**

To the Council:

Attached please find the comments of San Diego Gas & Electric Company to the Council's January 2011 report, *The Health Impacts of Radio Frequency from Smart Meters*. SDG&E appreciates the opportunity to comment, as well as the efforts of the Council in preparing the report.

Please contact me or Rebecca Giles ([RGiles@semprautilities.com](mailto:RGiles@semprautilities.com)) if you have any questions concerning SDG&E's comments.

Sincerely,

A handwritten signature in black ink that reads 'Ted M. Reguly'.

Ted M. Reguly  
Director, SDG&E's Smart Meter Program

Attachment

## Comments of San Diego Gas & Electric Company ("SDG&E") on the CCST Smart Meter Report

SDG&E appreciates the efforts of the California Council on Science and Technology ("CCST") in preparing its January 2011 report, *Health Impacts of Radio Frequency from Smart Meters* ("Report"). SDG&E agrees with the conclusions and key findings of the Report, and offers some observations and recommendations below.

The Report corroborates information that SDG&E and other California electric utilities have been sharing with their customers: that "[w]ireless smart meters, when properly installed and maintained, result in much smaller levels of radio frequency (RF) exposure than many existing common household electronic devices, particularly cell phones and microwave ovens" (*id.*, p. 4) and that RF exposure from smart meters "is a very small fraction of the exposure level established as safe by the [Federal Communication Commission] FCC guidelines" (*id.*, p.7).

SDG&E supports the following statements from the Report, which, when taken together, clearly recognize the importance of maintaining a science-based approach in setting policy, regulations and standards:

- "[R]egulators and policy makers may be prudent to call for more research while continuing to base acceptable human RF exposure limits on currently proven scientific and engineering findings on known thermal effects, rather than on general concerns or speculation about possible unknown and as yet unproven non-thermal effects" (p. 15);
- "[T]here is no evidence that additional standards are needed to protect the public from smart meters" (p. 26).

SDG&E notes that its Itron smart meters are engineered and tested in accordance with Title 47, Part 15 of the U.S. Code of Federal Regulations, and have been certified by the Federal Communications Commission ("FCC").

SDG&E notes the findings of the December 2010 Electric Power Research Institute ("EPRI") Technical Report An Investigation of Radiofrequency Fields Associated with the Itron Smart Meter, which provide empirical documentation that the exposure levels and duty cycles of the SDG&E smart meter in real-world settings are far lower than those presumed for "worst-case" consideration in the Report. This EPRI report was published and made available to the public at the end of December, 2010, just prior to the release of the Report. SDG&E recommends that the CCST reference this EPRI report in any update, and that the update incorporate appropriate details regarding exposure values, duty cycles and operating characteristics of the Itron smart meter.

### Observations and Recommendations

While the Report's findings on science and health are well-supported, SDG&E has the following observations:

**I. While the Report recognizes that no causal relationship between RF emissions and non-thermal human health impacts has been scientifically established, it erroneously concludes the FCC guidelines for safety are limited to thermal effects.**

FCC guidelines are not limited to thermal effects.<sup>1</sup> The FCC guidelines were adopted after considering research regarding all effects, whether thermal or non-thermal. The FCC guidelines are based on exposure limits recommended by the American National Standards Institute, the Institute of Electrical and Electronics Engineers, and the National Council on Radiation Protection and Measurements. The FCC also "carefully considered the large number of comments submitted in its rule-making proceeding, and particularly those submitted by the U.S. Environmental Protection Agency, the Food and Drug Administration and other federal health and safety agencies."<sup>2</sup>

The FCC recently confirmed in a letter that current smart meter installations (including those for multiple meters at a site) comply with FCC RF exposure limits.<sup>3</sup> This letter concludes "Please know that the FCC is continually monitoring the issue of RF exposure and related health and safety concerns, both in general terms of the continuing propriety of its regulations, and in individual concerns where substantive concerns are raised."

Recommendation: the final report clarify that FCC guidelines are not limited to thermal effects.

## **II. The Report's suggestion that consideration be given to alternative smart meter configurations contradicts its key findings and its discussion of relative emissions from other devices.**

The key Report findings include that 1) The FCC standard provides an adequate factor of safety against known thermally induced health impacts of smart meters and other electronic devices in the same range of RF emissions and 2) at this time, there is no clear evidence that additional standards are needed to protect the public from smart meters or other common household electronic devices. Given these findings, and the balance of the discussion in the report related to health impacts, there is no rational basis for a consideration of costly alternatives to smart meter technologies that have been and are being deployed around the globe.

The Report further analyzes RF exposures relative to other sources. The Report (p. 24) appropriately places the issue of alternatives in context of the much more significant RF exposures from other sources,<sup>4</sup> finding many other common household devices with higher RF exposures than smart meters. The Report concludes that exposure to RF from common household devices including cell phones and microwaves far exceed that of smart meters.

Unlike the rest of the Report, its recommendation to consider alternatives is not supported by reference to facts or studies. Suggesting alternatives as an option to smart meters ignores the public CPUC deliberative process that led to California utilities deployment of smart meter technologies, and does not attempt to address the questions of cost or impact on the benefits of smart meter deployment (otherwise well-documented by the Report).

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<sup>1</sup> Table of Contents; Key Report Finding #2; pp. 7, 8, 15, 22, 23, and 26.

<sup>2</sup> *OET Bulletin 65*, FCC Office of Engineering and Technology, August 1997

<sup>3</sup> *Letter to Cindy Sage from Julius P. Knapp, FCC* (August 6, 2010), cited at Report, p. 42

<sup>4</sup> *See also* Key Report Finding #1; Figure 1, Comparison of Radio-Frequency Levels from Various Sources in  $\mu\text{W}/\text{cm}^2$

Recommendation: The Report should focus on education as the best means of addressing concern by consumers and strike its recommendation to consider alternative configurations.

**III. The Report should acknowledge that SDG&E provides a significant amount of consumer information on smart meters on its website, relying on multiple, credible 3<sup>rd</sup> party sources.**

SDG&E supports the Report's statement (p. 24) that "[c]onsumers should be provided with clearly understood information about the radiofrequency emissions of all devices that emit RF including smart meters," as well as its conclusion (p. 26) that a "web-based repository of written reports, frequently asked questions and answers, graphics, and video demonstrations would provide consumers with factual, relevant information with which to better understand RF effects in our environment." However, SDG&E takes issue with the Report's unqualified observation (p. 24) that "CCST is not currently aware of a single website with up-to-date consumer information which we are able to endorse as impartial." This statement could be misunderstood to suggest that utilities and vendors are not providing such information. SDG&E notes that the information it provides to its customers regarding smart meter RF emissions (including graphics and FAQs) is far more detailed and useful than information typically provided to purchasers of cell phones, baby monitors, laptops, routers and other wireless devices. SDG&E's information is based on, and cites to current, impartial third party sources, including the FCC, the U.S Food and Drug Administration and the World Health Organization.

The Report's concern in this area appears to be that there is no non-vendor, non-utility website devoted to smart meter consumer information. It appears that regulators would be the most likely candidates to undertake such a mission.

Recommendation: the final report should acknowledge utility and vendor efforts to provide such information, including their reference to credible third parties such as the FCC.

**IV. The Report should acknowledge that the mesh network would not function at meter duty cycle of 100%.**

While the Report considers a hypothetical 100% duty cycle for purposes of assessing RF exposure from a smart meter, it does not address the functionality of the mesh network under such conditions. The December 2010 EPRI Technical Report An Investigation of Radiofrequency Fields Associated with the Itron Smart Meter also considers a 100% duty cycle, but qualifies it as "an unrealistic assumption" [p. v] and "at which point the mesh network would not function" (*id.*, p. 1-5). Itron, the manufacturer of SDG&E's smart meters, has calculated the maximum duty cycle for the meter is 5% and that the design limit for the mesh network is approximately 30%.

SDG&E notes that the Report acknowledges that "[e]ven in this 100% scenario the RF emissions would be measurably below the FCC limits for thermal effects" (*id.*, p. 17), and that the EPRI Technical Report agrees.

Recommendation: The Report should be make clear that 100% duty cycle is an unrealistic assumption, and that mesh networks, by design, could not function at duty cycles approaching such an assumed condition.

**V. The Report should explain its rationale for assuming future higher duty cycles.**

The Report states (p. 10): "[i]n addition, when the smart grid is fully functional the smart meters would be expected to be transmitting much more than once every four hours, providing data in near real-time, which will result in a much higher duty cycle." There is no explanation for this assumption. Itron has indicated that future data transmissions are expected to be at much higher bits per second rates, thereby reducing the amount of time needed for transmission.

Recommendation: The Report should remove the sentence cited above.

#### **VI. The status and qualifications of those submitting material to the CCST is not clear.**

Appendix D lists "Written Submission Authors." But it is not clear whether the submissions were specifically solicited by CCST or why some submissions were classified as "Biologists/medical." Both questions have implications for the report and for the RF health issue generally.

SDG&E believes that it is proper for the CCST to solicit and consider written submissions directed to the Report's issues from a broad range of perspectives, and to list such submissions. But the current display of submissions in Appendix D is ambiguous, in that the authors listed could claim that the CCST endorses their claimed qualifications or the content of their submissions. The final report should take care not to display the submissions in such a way that the submitters could claim to be contributors to or their submissions endorsed by the Report, at least based on the listing alone. In addition, the brief reference to the submitter's qualifications should be clarified to avoid the appearance that the CCST endorses any claimed expertise in the "Biologists/medical" field. In this regard it is not clear that any expertise of some listed under this latter category lies in the biological/medical field.

Recommendation: change the title of Appendix D to "Material Submitted for CCST Consideration", removing entirely the characterization of "Physical Sciences/Engineers" and "Biologists/medical", and removing author's stated credentials (except for degrees such as Ph.D., M.D., M.S., etc.), which are not part of usual citation form.

#### **Conclusion**

SDG&E commends CCST for a thoughtful and thorough report. SDG&E asks the CCST to consider the recommendations herein.