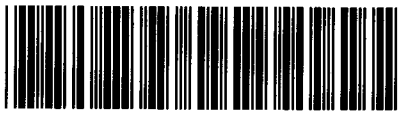

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Project 40190		
PROJECT RELATING TO ADVANCED METERING ISSUES	§ § §	**BEFORE THE PUBLIC UTILITY COMMISSION OF TEXAS**

QUESTIONS FOR THE TEXAS PUC

Although not required by the Texas Public Utilities Commission (hereinafter "the TX PUC") procedures published July 30, 2012 for the Project 40190 Public Forum scheduled for August 21, 2012, here is a list of questions for the TX PUC. Some of the questions refer to a "smart meter." In those cases where a particular electric provider uses multiple models/versions of smart meters with different operating characteristics, the answers should provide a break out for each model.

1. Do the deployed smart meters include both a WAN transmitter and a HAN transmitter? HAN stands for home area network (where an oven or other appliance is linked via radiation to the smart meter). If yes, are the HAN transmitters on by default?

2. What is the current duty cycle (i.e., how long is the smart meter emitting radiation every 24 hours) range for the WAN transmitters of deployed smart meters? Is this figure expected to increase over time? If so, to what levels?

3. What is the frequency range for the WAN transmitters used in the smart meters?

4. Is the WAN transmitter used on the smart meters omnidirectional (i.e., shoots in all directions) or directional (i.e., shoots principally in one direction). If directional, about how wide is the cone of radiation at 3 and 10 feet? If directional, is there a way for a consumer to tell which direction the meter WAN transmitter is pointing and thus try to stay out of the beam?

5. Are the deployed smart meters arranged in mesh networks? If yes, what is the duty cycle

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range for those meters configured as collection nodes (i.e., a smart meter that acts a collector of radiation from many surrounding smart meters and a more frequent transmitter of radiation to a neighborhood receiver)? Are there any outward markings that identify a smart meter as a collection node smart meter and that would enable a consumer to know that he has a collection node smart meter. Have those consumers who have been or are slated to be burdened with a collection node meter been informed by the electric providers (or anyone else) that their smart meter is operating as a collection node? If not, will they be?

6. The attached "Smart Meter Safety" flyer published by the TX PUC lists a plane wave equivalent power density (i.e., a measure of the power of the radiation) of 0.0018 Watts/square meter ($W/m^{2)}$ for a smart meter operating for 1 to 2 seconds at a distance of 10 feet from the smart meter, and power density value of 0.0043 Watts/m^2 for a microwave oven operating for 1 to 10 minutes at a distance of 3.25 feet from the oven. What is power density for the smart meter operating for 1-10 minutes and at a distance of 3.25 feet? Are there consumers in Texas whose installed smart meters are positioned on the order of 3.25 feet from their living areas, say in an apartment complex or where the smart meter is mounted on the wall of a house next to a bedroom or other living area?

7. Would it be possible for a hacker to gain access to a smart meter or mesh network?

8. If the answer to question 7 is yes, then would it be possible for the hacker to do any of the following:
   a. increase the duty cycle of the meter WAN transmitter to 100% (i.e., set it so that it emits microwave radiation constantly)?
   b. shut off the consumer's power?
   c. cause the smart meter to overheat (by manipulating the meter's voltage regulator or by other means)?

9. If the answer to questions 7 and 8 is no, then why not?

10. Do clusters of smart meters, such as those present on apartment buildings and other group living environments all over Texas, emit greater levels of microwave radiation than single-family unit smart meters? Does the the attached "Smart Meter Safety" flyer published by the TX PUC have relevance to the radiation levels experienced by consumers in a clustered meter environment?

11. Do smart meters arranged in clusters, such as those present on apartment buildings and other group living environments all over Texas, ever emit microwaves that constructively interfere (like two ocean waves colliding and producing a much bigger wave), and by superposition produce radiation beams of greater intensity? Have any of the sources of information relied upon by the electric providers and/or the TX PUC as allegedly establishing the safety of smart meters considered clustered meter radiation? If so then please identify.

12. Given the demographics of many apartment dwellers in urban areas of Texas, does the prevalence of clusters of smart meters on such apartments mean that minorities and other disadvantaged citizens in Texas are being subjected to greater levels of microwave radiation than non-minorities or more affluent citizens? Would the electric providers' deployment of and the Texas PUC's mandate for the smart meters in such circumstances constitute a violation of the Fair Housing Act of 1968? Would the electric providers' deployment of and the Texas PUC's mandate for the smart meters in such circumstances constitute a violation of the 14th Amendment Equal Protection Clause?

13. In response to some consumer complaints about smart meters, the TX PUC has cited to a paper published by the Electric Power Research Institute entitled "A Perspective on Radio-Frequency Exposure Associated with Residential Automatic Meter Reading Technology." In that paper, the Electric Power Research Institute noted that lab studies

on "lab animals" have found that microwave radiation exposure above a certain level resulted in "behavior disruption" in the lab animals. The paper does not identify the type of lab animals. Given that behavior in rats and monkeys is, as in humans, governed by the brain, does that suggest that microwave radiation can have other than merely thermal impacts on the human brain as well? Given the greater complexity of the human brain versus the brain of a rat or monkey, is it possible that the radiation effects could be more profound in the human brain than the monkey brain? How about the brain of a human child?

14. What is the relevance of the FCC standards for microwave radiation thermal effects (specific absorption rate, etc.) to the risks of chronic diseases, such as cancer, miscarriage, birth defects, semen quality, autoimmune diseases, etc. from chronic (24/7), localized microwave radiation (i.e., from smart meters)? Did the FCC study or have studied the effects of chronic, localized microwave radiation on the human body before issuing that standard in 1996?

15. Does the Government Accounting Office's recent formal request for the FCC to revisit its radiation safety levels impact the electric providers' reliance on the FCC standards?

16. Have any of the sources of information relied upon by the electric providers and the TX PUC as allegedly establishing the safety of smart meters considered the non-thermal effects on the human body of chronic, localized microwave radiation from smart meters? If so then please identify.

17. It took decades for the scientific community to work out some of the mechanisms linking tobacco to cancer formation and Agent Orange to cancer formation. During those decades the relevant industries (tobacco, the Pentagon) argued tobacco and Agent Orange did not cause disease. Given the absence of scientific study on the non-thermal effects of microwave radiation, is it possible that, as in the cases of tobacco and Agent Orange,

evidence of disease will take time to manifest itself?

18. The International Agency for Research on Cancer, a branch of the World Health Organization, last year deemed radio-frequency radiation, which is emitted by cell phones, smart meters and many other devices, a "possible carcinogen." Does the TX PUC consider this finding to be wrong? If so, on what basis?

19. At least the states of Vermont, California, Maine, Nevada and Oregon allow consumers to opt-out of smart meters. Were the governments of those states wrong to give consumers the choice to opt-out? If so, why?

20. Is it equitable to charge a consumer a monetary penalty to not have a product at her home that she never wanted in the first place?

21. In its most recent 10Q filing with the US Securities and Exchange Commission, Centerpoint Energy Houston Electric, LLC (hereinafter "Centerpoint") listed net income before taxes of $125,000,000 for the second quarter of 2012. Centerpoint has supplied many figures allegedly showing the cost to Centerpoint of an opt-out program in its filings for Project 40190. Assuming for the sake of argument that Centerpoint's figures, and the various assumptions underlying them, are correct, do those figures suggest that Centerpoint will operate at a loss if an opt-out program is instituted? Would Centerpoint be pushed to insolvency? Do the answers change if consumers are not penalized for opting out? What about the other electric providers?

August 13, 2012

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CUSTOMER FACTS

Smart Meter Safety

Smart meters communicate energy consumption data to your electric utility provider through brief low-level radio frequency (RF) transmission signals that occur for one to two seconds. People are exposed daily to low levels of RF energy, including natural RFs from both the earth and the human body and man-made RFs from common electronic devices.

These everyday devices typically cause significantly greater exposure for longer periods of time than smart meters, including cordless phone base stations and microwave ovens, which are usually positioned closer to the user. Additionally, RF exposure drops rapidly with distance.

In order to prevent serious health impact from exposure to RFs, the Federal Communications Commission (FCC), with the advice of the U.S. Food and Drug Administration (FDA) and other health and safety agencies, has set limits on power densities from electronic devices.

The smart meter, which is installed on the exterior of a house, emits an RF signal that is at least ten times below the FCC standard and is considered safe for everyday exposure.

To learn more about radio frequency technology and safety, visit the FCC website at: www.fcc.gov/oet/rfsafety.

The acceptable FCC RF limits are 6.1 W/m² and 10 W/m² depending on frequency for continous whole body exposure.

Cellular Telephone: 7.8 W/m² at 2" for 1-20 minutes*

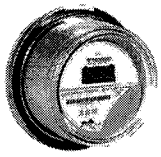
Bluetooth USB dongles: 0.042 W/m² at 4" for < 1 minute*

Baby Monitor: 0.029 W/m² at 3'3" for 8 hours*

Cordless Phone Base: 0.0052 W/m² at 3'3" for 1-30 mins*

Microwave Ovens: 0.0043 W/m² at 3'3" for 1-10 mins*

WiFi Base Station: 0.0021 W/m² at 3'3" for 10-60 mins.*



Smart Meter: 0.0018 W/m² at 10' for 1-2 seconds*

*As illustrated, power density is measured in Watts per square meter (W/m²). The distances shown are for typical exposures.

QUESTIONS:
Call: 1-888-782-8477, in Austin 512-936-7120 (TTY 512-936-7136) (FAX 512-936-7003)
Visit: www.puc.state.tx.us
Email: customer@puc.state.tx.us

COMPLAINTS:
Call: 1-888-782-8477, in Austin 512-936-7120 (TTY 512-936-7136) (FAX 512-936-7003)
Write: PUC - Customer Protection Division P.O. Box 13326, Austin, TX 78711-3326
Online: http://www.puc.state.tx.us/consumer/complaint/Complaint.aspx