Appointment:

From: Erickson, John David

To: Meadows, James L (/O=PG&E/OU=Corporate/cn=Recipients/cn=J7M2); Dietz, Sidney (/O=PG&E/OU=Corporate/cn=Recipients/cn=SBD4); Redacted Redacted ; O'Donnell, Arthur J. (Arthur.O'Donnell@cpuc.ca.gov); Al-Mukdad, Wendy (wendy.al-mukdad@cpuc.ca.gov); Gupta, Aloke (aloke.gupta@cpuc.ca.gov); Erickson, John David (john.erickson@cpuc.ca.gov); Redacted Redacted); Davis, Earle S (/O=PG&E/OU=Corporate/cn=Recipients/cn=ESD5)

Subject: FW: AMI questions

Location: Room 7634 (CPUC East/Energy Div)

Start: 3/12/2014 8:30:00 AM

End: 3/12/2014 9:30:00 AM

-----Original Appointment-----
From: Erickson, John David [mailto:john.erickson@cpuc.ca.gov]
Sent: Monday, March 10, 2014 9:56 AM
To: Erickson, John David; Gupta, Aloke; Al-Mukdad, Wendy; O'Donnell, Arthur J.; Redacted ; Meadows, James L; Redacted ; Davis, Earle S
Cc: Energy Interim DR Team
Subject: AMI questions
When: Wednesday, March 12, 2014 8:30 AM-9:30 AM (UTC-08:00) Pacific Time (US & Canada).
Where: Room 7634 (CPUC East/Energy Div)

Meeting to discuss the following with PG&E:

I am interested in the performance of HAN direct load control devices in responding to DR signals that are issued to devices that are joined to the meter network.

An example of the type of device I am referring to is here:
http://simplehomenet.com/proddetail.asp?prod=ZigBee_Smart_Energy_Smart_Plug . I am not promoting this particular device. It is one that I have found that is:

a) ZigBee SEP 1.1 compatible

b) low cost

c) has a metering function that provides voltage/current/power/energy readings for the device it is controlling

I would like to get an idea of the potential for using these types of devices, joined to the meter, to provide "supply-side" flexible resource capacity that is suitable for bidding into the CAISO market. I am particularly interested in the capability of large aggregations of these devices, controlled via the meter HAN, to provide both ancillary services and flexible capacity.

There have been questions that have been raised in various settings (most notably by LBNL) regarding the performance limitations of the AMI network, working in conjunction with the ZigBee meter HAN, that severely limit the utility of this system to provide flexible capacity of the type I mentioned above.

The questions I am asking here and in the meeting are directed at determining:

1) how much do we really know about the basic performance of the existing AMI/HAN as deployed? (i.e., throughput, reliability, latency)

2) what are the actual limits of the performance of this system, working in conjunction with devices of the type I mentioned above?

3) What is a reasonable estimate of the amount of USEFUL available DR capacity that can be accessed via AMI/HAN?

I think it would be interesting to set up a device and/or (devices) such as the one I mention above in the meter farm that Charlie mentioned, and test its ability to respond to signals such as would be coming in via a CAISO dispatch. (Assuming of course that you haven't already done this!) This would include both the response time to a load control event, as well as the response time on retrieving the data that could be used to satisfy the CAISO telemetry requirement. In this case, the device I mentioned above could supply data on whether the load drop actually occurred.