CO PUC Questions on Customer Data Access Webinar

I.   **General Questions related to Customer Data Access:**
   o What is the extent of "customer direct" data access options (circumventing utility; on-site self-collection)?
   o Are there notable significant tradeoffs in the "customer direct" model?
   o What is known about (effective) residential market segmentation, as it pertains to using various feedback strategies?
   o How does the Green Button initiative supported by the White House and DoE fit into the conversation re: Customer Data Access? What issues does it aim to resolve and how?

II. **Questions relating to slides:**
   o **Slide 3:** What determines that range of 4% to 15%? Are there common identifiable characteristics of feedback mechanisms or treatment groups that results in the savings on the higher end?
   o **Slide 5:** What issues are there with the studies and reports that cite 5-15% reduction in consumption attributable to IHDs?
   o **Slide 5:** What are some studies that explore the DR/DSM effectiveness of a residential consumer's access to near real-time meter data vs. next day access? Why are results questionable? Has anyone done any behavioral research (psychology, anthropology, decision making) to address how this information (whether real time or next day) could actually be used by consumers and figures into decision making re: energy use?
   o **Slide 5:** Could you please explain why rate, bill design, and frequency of billing might influence IHD impacts?
   o **Slide 6:** Intriguing point re: the emphasis on short-term behavior changes at the expense of long-term infrastructure changes and the muddling of policy goals. Don't both, however, begin with increased access to data? Seems that firms will find the ancillary products and services that lower transactions costs for the consumer to make both 1) short term decisions on the margin (should I turn on the fan or AC this afternoon; what is the $ difference between the two as weighed against an internally monetized sense of comfort, environmental cost, etc.) and 2) long term infrastructural changes (what is the cost of owning that washer and dryer given my existing energy usage patterns).
   o **Slide 7:** Is there a financial threshold, in absolute $ potentially saved per unit of time, or relative to household income, where an interest in one's energy (electricity) consumption becomes meaningful/relevant?
      ▪ In a market such as Public Service Co. of Colorado, where most residential customers use under 1,000 kWh/mo., and where a kWh is ~$.11, a 10% reduction in usage represents about $11/month—probably below the level of interest for many households.
   o **Slide 7:** Has anyone done any research on how strong other motivating factors are compared to the financial/economic motivators? Ex: competitive behavior, gamification, etc.

- o **Slide 8:** Excellent summary of the general invisibility or elusiveness of information re: one's energy use. Ex: in CO we have tiered rates but consumers don't have a readily available way to check when they're nearing the 2nd tier more expensive tier (>500 kWh) due to lack of smart meters metering usage in increments – except for 23,000 smart meters in Boulder as a part of the SmartGridCity project.
- o **Slide 8:** Also, when it comes to information, accessibility should be distinguished from availability. The information might be available, but can a consumer make sense of it or does h/she need to hire an engineering graduate student to explain what his/her data means? What does it take for data to be made actionable?
- o **Slide #9:** Rather than trying to determine if IHDs are or are not the solution, isn't the more appropriate question "for whom do IHD's cause the desired actions?" (e.g., segmentation)
- o **Slide #10**: Excellent context setting framework helps parse out the key issues at each level: Data, Relevance of the Data, Consequence, and Action. Has any utility or research analyst applied this framework in a pilot?
- o **Slide #13**: An excellent slide that helps to set a context around what behavior change one hopes to expect from employing particular feedback options.
- o **Slide #14:** What is known about the relative effectiveness (cost/benefit) of impacting infrastructure decisions "upstream" vs. via feedback? [NEEA has a project underway using upstream incentives with retailers to increase the promotion of very high efficiency televisions, and possibly other appliances, called "energy forward." See: http://www.energyefficientelectronics.org/]
- o **Slide #15** ("What do customers need?") – Is this a "one size fits all" way of thinking re: (residential) customers? Do the "rational energy decisions," "behavioral and infrastructure decisions" and "best form and medium" vary by segments, such as along economic lines?
    - ▪ Wouldn't those with rather extensive discretionary income make different "rational energy decisions" than those living on a budget?
- o **Slide #15:** The question re: "what is the best form and medium to present the information to support these decisions; which delivery channel" is intriguing. If the market is redefined as "energy information delivery", delivery options can vary in technological complexity and cost (Opower mailings, IHDs, web portals via mobile devices, etc.). Whose role is it to provide the service of attractive, digestible, resonant information to the consumer? Seems like firms that compete on how consumers absorb and digest information (Google, Apple, i.e consumer-facing platform/app firms) are better suited to address this current market gap than the utility. If so, what role does the utility play; should we attempt to influence and provide incentives for our utilities be more like Googles or draw rules where the Googles can compete for providing these services to the consumer with other firms in the "energy information delivery" market? What does this practically look like for the consumer?

- **Slides #17 and 18**: (EPRI Customer Information Continuum) seem to imply market segmentation. Are there profiles/descriptions (qualitative/quantitative) regarding what type of customer matches to each feedback delivery mechanism?
- **Slide #17:** If usage information is provided in 15 min intervals the day after consumption, is that identified as "indirect feedback" (provided after usage) or does that count as real time feedback?
- **Slide #22:** Could you please explain the horizontal axis ("Participation levels"), especially with so many data points at/near zero? FYI - The EPRI study noted in the footnote is not accessible; link may have changed.
- **Slide #26:** Excellent presentation of options, this helps put IHDs in the context of one of many other options varying in technological complexity (and cost) to deliver information. Do the ARRA pilots like SMUD hope to test different information delivery approaches and plan to compare effectiveness and tradeoffs between approaches? This information is lacking at current. It's difficult to weigh costs to expected benefits which are dependent on consumer response. This information can help reduce risk for utility driven options that regulators approve of or direct.
- **Slide #26:** Seems to imply that there are/could be third-party provided customer feedback options. We're curious to know more about these (related to the first "general" question, above), especially if they are distinct from the utility, vs. in conjunction with.
- **Slide #28:** (Commonwealth Edison's offer of free and purchased technology) – how were customers selected to be given the offer?
- **Slide #28:** Re: the low implementation rate of IHDs in the Comm Ed pilot: When faced with issues re: low rates of acquiring and implementing IHDs, how do you identify the culprit as being 1) the potential undesirability of the particular device in question, 2) lack of interest in IHDs as the delivery channel of choice, 3) inadequacy in the type of information made available, 4) issues around the display and accessibility, or lack thereof, of that information, or 5) overall depressed market demand as a function of lack of interest in home energy management? How do you know which factor is contributing to the low rates of interest and adoption?
- **Slide #31:** What is known about why pre-payment causes a greater reduction in consumption (when combined with an IHD) than just the IHD alone?
  - Maybe there is another factor involved here – such as geography/culture? (e.g., what's going on in Canada, and New South Wales that makes people receptive to feedback? Is it because Canadians are more polite? ☺)
- **Slide #33:** Are there any known examples of pilots other than SMUD focused on "information treatments" rather than a device focused approach? Are there known examples of pilots exploring "a dynamic mix of multiple treatments?" or where a dynamic mix of multiple treatments is already in use?
- **Slide #34:** What are "dispatchable prices?" (Is that the same as dynamic prices?) Also, the policy options under "infrastructure change" are, for the most part, beyond the scope of PUC jurisdiction (other than via market transformation-focused DSM

initiatives). Some of them (building standards and appliance standards) tend to bypass the consumer and, thus, don't require effective feedback – yes?

- Slide #34: Does "Data Access" just refer to making the data available or does it speak to other parameters as well (digestibility of data, actionability of data presented, to what degree the data provided can facilitate increased automation and control via ancillary products and services, etc.)? Are there particular principles being developed for such "data access" parameters? Does "Green Button" provide such a framework?

- Slide #38: (results of various pricing studies) – What is known about why there is such a significant variance between the results?

- Slide #49: How were the peak & event prices determined?

- Slide #51: conclusions re: the hypotheses: Could you please explain a) savings for customers with more information being mixed and c) savings being better for customers on the dynamic rate vs. the direct load control? Also, does the conclusion that savings are **NOT** better for customers with particular certain common demographic characteristics (age, education, income) downplay the role segmentation might have in selecting particular early adopters that could offer more savings than others with differing demographics? Did you test for psychographics (attitudes, values, and interests) in addition to demographics? The distinction being that there are psychographic factors that could transcend demographics that could be salient in influencing responses to feedback.