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Sent: 12/21/2011 10:35:15 PM

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Subject: RE: INFORMATION: Submetering Protocol Project Follow Up

Chetna/IOU's:

I applaud the effort in California to look at subtractive billing – and believe this could be a ground-breaking approach that other states will follow. I also appreciate the IOU responses you sent below.

I'd like to add one more comment from Ford. Specifically, there were statements made on last week's call regarding the IOU's ability to install submeters at cost parity to 3rd parties. I'd like to understand your view more on this – considering the 3rd parties/customers will already have funded the majority of the costs with the installation of a device (i.e. EVSE)... We believe that the lowest cost solution will be to incorporate into those existing processes (i.e. the 3rd parties will have only a small incremental hardware cost to implement if incorporated into an existing device).

There is also the comment that was made below regarding fixed costs:

IOU Response: The IOUs are not prepared at this time to provide detailed cost estimates to add subtractive billing capability at each individual IOU. However, given the number of proprietary legacy systems that would need to be upgraded and integrated to do subtractive billing, the IOUs anticipate that the cost and time to implement for each IOU would be significant and could substantially reduce any potential cost saving the customer may gain from submetering.

I understand that there will be fixed costs to amortize to handle subtractive billing. However, without having a detailed business case (and debate with the whole team) on the variable costs savings compared to the fixed costs, I think any statement like “substantially reduce any potential cost save” is premature at this point. Because we are looking at both fixed and variable cost saves, there will be a breakeven point. My suggestion is to not talk about costs or business case until the numbers are known and aligned – otherwise it is speculation.

Thank you,

Mike Tinskey

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Sent: Wednesday, December 21, 2011 8:45 PM

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Subject: INFORMATION: Submetering Protocol Project Follow Up

Hello everyone,

Most of you have seen a number of email communications regarding various issues on the submetering project. The IOUs thought they would provide some additional thoughts and information in response. Please see the collective comments and responses below:

Alana Chavez-Langdon of ECotality communicated the following:

"I would respectfully request to remove the label "a product of the AFV OIR Submetering Protocol Working Group due to the fact it is yet to be seeing that all members of the working group agree with the conclusions drawn at the end of the document"

IOU Response: IOUs will update the presentation to indicate which sections were products of the AFV OIR Submetering Protocol Working Group and which were developed by the IOUs only. The IOUs will also update the presentation with other edits requested during the presentation and will distribute the updated presentation along with meeting minutes this Wednesday or Thursday.

George Bellino from General Motors communicated the following:

1) **GM Comment:** "I hope it is not too late to provide comments on the issues addressed at last Friday's all hands meeting."

IOU Response: It is not too late to provide comments. All stakeholders will have ample opportunity to comment to the CPUC on the IOU Roadmap and its implementation following the filing of the Roadmap Report 12.31.2011 with the CPUC.

2) **GM Comment:** "Without clear definition of the technical and certification requirements and specifications, determinations on many aspects of the roadmap may be unqualified or subjective."

IOU Response: The IOUs agree completely. The roadmap will be submitted on December 31st with the current understanding of requirements and specifications developed collaboratively by the IOUs and 3rd parties. However, we expect that specific technical requirements and specifications will continue to evolve during protocol development as the working groups develop more details around one or more submetering solutions and the initial roadmap conclusions are subject to change as part of this process.

3) **GM Comment:** "PEVs from most OEMs do have the capability to measure the AC from the grid into the vehicle presently. The ability to integrate a revenue grade measurement capability into the vehicle can conceivably be accomplished within two years depending on the determined technical specifications and certification requirements. An embedded firmware technology solution should be the recommended direction and could apply to other location applications such as in the EVSE, cord set, or other convenient customer communications and monitoring devices. Decisions on the allowable technologies would drive the considerations for certification."

IOU Responses: The IOUs are not preventing OEMs from currently measuring the AC from the grid into the vehicle for non-utility billing purposes. However, if OEMs wish to use the same vehicle integrated energy measuring device for utility billing purposes then in addition to having a revenue grade meter, other technical requirements will be necessary. For example, these requirements could include a premise identifier and a method for accuracy verification. Furthermore, utilities must have the communications and back office systems necessary to support the automatic exchange and processing of energy consumption data. This leads us to believe that the mobile use cases are a longer term solution.

4) **GM comment:** "There needs to be a clear focus on not making any decisions today that will negatively affect or preempt the desired long term solutions."

IOU Response: The IOUs agree. The roadmap and protocol will continue to evolve as we learn more about submetering and new technology solutions become available.

5) **GM comment:** "The primary decision criteria needs to be what is the most convenient and cost effective solution for the customer, which I do not see listed in the Guiding Principles."

IOU Response: The purpose of the Guiding Principles was to clarify certain aspects of the EV submetering protocol development. As such, it did not include the customer perspective offered by GM. However, the IOUs agree with GM's comments and stated similar criteria on page 4 of the October 27, 2011 Submetering Workshop Report:

- Enabling customers to identify options best serving their needs
- Ensuring customer experiences with charging EVs are positive

And on page 5:

- Provide customers charging installation alternatives
- Reduce customer installation cost, time and complexity

Tam Hunt from Community Renewable Solutions communicated the following:

"It is becoming increasingly clear that the best course of action is to seek an extension of time to complete the Roadmap. My client, the Green Power Institute, suggests a one month extension."

IOU Response: While additional time may be desirable in some circumstances, Adam Langton from the CPUC has informed us that the CPUC would prefer to proceed with filing the Roadmap on December 31, 2011. He stated that after the roadmap is submitted to the CPUC as scheduled, the

CPUC will provide 3rd parties with a formal opportunity to comment.

Richard Lowenthal from Coulomb communicated the following:

The utilities are saying that their cost of adding subtractive billing to their billing system is more than equipping everyone with a second utility meter and meter panel. Given that is true, we shouldn't waste any more time on submeters.

IOU Response: The IOUs are not prepared at this time to provide detailed cost estimates to add subtractive billing capability at each individual IOU. However, given the number of proprietary legacy systems that would need to be upgraded and integrated to do subtractive billing, the IOUs anticipate that the cost and time to implement for each IOU would be significant and could substantially reduce any potential cost saving the customer may gain from submetering.

Farazad Ghazzagh from CPUC Division of Ratepayer Advocates communicated the following:

DRA Comment: "I have not seen any estimates from the utilities on the additional cost of subtractive billing, but according to SMUD's Bill Boyce there is very little added back-office cost. They have already installed submeters and changed their back office software to deal with it."

IOU Response: It is the IOUs' understanding that SMUD's back office system is SAP based vs.the IOUs' existing systems. That distinction would make SMUD's billing system upgrade apparently easier and less expensive than what it would entail to upgrade and integrate the IOUs existing systems to do subtractive billing. In addition, it appears that SMUD is only using its own submeters and is apparently not engaged in any integration with 3rd parties which further simplifies SMUD's transition to submetering and subtractive billing. SMUD is also experiencing a much smaller EV adoption rate compared to the IOUs.

**Our understanding of SMUD's system is based on information from a SCE meeting with SMUD back in May 2011*

b) **DRA comment:** "Last Friday half of the conference call was spent on discussing separate metering. This forum was formed to only deal with submetering protocols and related costs because some parties, including DRA, believe that it may be a more cost-effective approach for the ratepayers and customers than separate metering. We should try to keep our focus on this subject"

IOU Response: The IOUs agree but believe it was important to discuss and consider the separate metering alternative given that the IOUs anticipate that the cost and time to implement subtractive billing for each IOU would be significant and could substantially reduce any potential cost saving the customer may gain from submetering.

The IOUs recently submitted a response to a submetering Data Request issued by the CPUC and are now focused on incorporating the last two months' discussions into the Roadmap Report due on December 31st. While we highly value your contributions and look forward to continued collaboration with you next year, we are entirely focused now on completing the Roadmap Report and as such may not be able to respond to additional stakeholder emails until after the holidays. Adam Langton in the Energy Division informed us that the CPUC will provide 3rd parties the opportunity to respond formally to the Roadmap Report early in 2012. Thank you for your understanding.

Also attached is the updated information from last week's all hands. Thank you for all your support and dedication on the submetering effort.

Wishing you a very happy holiday!

Thank you,

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