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SDG&E

A **Sempra Energy** utility

May 12, 2014

Energy Division
Attention: Tariff Unit
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102

Re: Comments of San Diego Gas & Electric on Draft Resolution E-4651

Dear Energy Division Tariff Unit:

San Diego Gas & Electric Company (SDG&E) appreciates the opportunity to comment on Draft Resolution E-4651 (Draft Resolution), issued on April 21, 2014. The Draft Resolution addresses SDG&E's, Southern California Edison's (SCE), Pacific Gas and Electric Company's (PG&E) (collectively referred to as the Investor-Owned Utilities or IOUs) Advice Letters seeking approval of Schedule Plug-In Vehicle Submetering Pilot in compliance with Decision (D.) 13-11-002. The Draft Resolution approves the IOUs' request to proceed with the submetering pilot, with modifications. An overview of SDG&E's Comments is provided in the next section, followed by the discussions of SDG&E's recommendations.

Overview of SDG&E's Comments

SDG&E appreciates the Commission Staff's review of the IOUs' advice letters and efforts related to the implementation of the submetering pilot. However, in these Comments, SDG&E notes that certain aspects of the Draft Resolution should be amended or require clarification. The resolution should clarify the IOU's proposed budgets to reflect the utilities' budget estimates. In addition, SDG&E addresses updating the pilot timeline, availability of online tools and submetering data presentment, updating Data Reporting and Transfer Requirements to be included as part of the Final MDMA Registration Agreement, retention of existing Tariff definition of "Summary Bill" and "Premises", and the requirement for MDMAs to Notify the CPUC of Termination of Pilot Service and schedule revisions.

In addition, SDG&E and the other IOUs have collaborated regarding the Draft Resolution and agree on the identification of a number of issues and their resolution. Particularly, SDG&E agrees with PG&E's analysis and recommendations related to the

third party evaluation budget, the approach for validating, editing, and estimating interval data, and limit of submeters per primary meter. In addition, SDG&E agrees with SCE's recommendations on customer eligibility for other IOU programs, treatment of participating customers who relocate during the pilot, safety requirements, and availability of usage-related tools, and edits to Schedule PEVSP.

The Resolution Should Clarify the IOUs' Proposed Budgets

IOU	Draft Resolution	Advice Letter Attachment B	Difference
SCE	$4,179,333	$4,270,000	-$90,667
PG&E	$3,327,333	$3,020,000	$307,333
SDG&E	$3,049,333	$3,298,000	-$248,667

- The draft resolution provided no discussion or rationale for the budget changes noted above and inaccurately reflects SDG&E's proposed budget estimate on Draft Resolution page 1.

- The resolution should explicitly provide for cost recovery for SDG&E's Pilot Program and not simply establish a budget.[1]

The Resolution Should Update the Pilot Timeline to Conform with the Directives of D.13-11-002.

The Commission has acknowledged the importance of these pilots in developing the final EV Submetering Protocols. Specifically, D.13-11-002 states that *"A PEV submetering protocol should not be fully implemented until the Commission conducts pilots and evaluates the results"* (Conclusion of Law #3). However, the current timeline is entirely incongruent to the concept of leveraging the pilot results to properly inform subsequent IOU filings under this proceeding and has already been significantly impacted by the delay in starting the pilots.

Assuming a resolution is approved on June 12th, the pilot will begin on or around July 26 based on the Executive Director's authorization of extension. This represents a three month delay from the original Phase 1 Pilot start date of May 1, 2014. The impact of this delay ripples through the D.13-11-002 timeline as illustrated in the following examples:

- It will take approximately five months after resolution approval to finalize, distribute and award the 3PE contract. Consequently, the 3PE contractor would not be able to begin work until late December 2014. D.13-11-002 states the 3PE's first deliverable of a Phase 1 enrollment and cost interim report is due December 31, 2014, only days after contracting and a month before the end of the Phase 1 Pilot's enrollment period. SDG&E submits that the 3PE will need at least 120 days after signing their

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[1] On May 8, 2014, SDG&E filed a Surreply in A.12-11-001, requesting authority to open a balancing account, or alternatively, a memorandum account, for SDG&E's PEV Submetering Pilot.

contract to create pilot metrics, obtain the required information and compile a meaningful report for phase 1 of the pilot.

- It is unclear whether the Commission intends Phase 1 participants to be allowed to participate in Phase 2. As a result of the projected delay, there is currently a 9 month overlap for the two pilots. SDG&E strongly recommends the Commission stagger these phases so as not to overlap each other.

- The stated timeframes to plan the 2nd phase of the pilot are unreasonable. The current schedule allows only one month after the 3PE report is published for: (1) ED to host a workshop to discuss the 3PE report; (2) then plan for Phase 2; (3) the IOUs to analyze the findings; (4) then re-draft the plan; and (5) refile the PEVSP tariffs and forms for Phase 2 Pilot. SDG&E believes the Commission should allow at least 90 days after the 3PE report is necessary to complete the work required for the 2nd phase of the pilot.

- The Draft Resolution does not state a date by which the Submeter MDMA will propose methodologies for testing and calibration for IOU review, consent, and subsequent implementation (p. 24). SDG&E suggests the MDMA methodologies for testing and calibration should be made available after the 3PE is selected and under contract in late December 2014 and before Phase 1 ends on January 31, 2016.

- The timing of the 3PE Phase 2 evaluation relative to when the IOUs are required to submit their Submetering Protocol report for phases 1 and 2 is likewise unrealistic given the current pilot start date.

- To address these and other obvious pilot timeline issues, SDG&E recommends that a new regulatory timeline be created to accommodate the delay and to allow time for pilot learnings to be appropriately documented, evaluated and incorporated in the Submetering Protocols. SDG&E is willing to work with the ED and the other IOUs to develop a new timeline to be submitted as a CPUC Executive Director letter request.

<u>Online Tools Will be Available to Pilot Participants but the Data Presented will not Include Submetering Data</u>

- IOUs had proposed that customers enrolled in various online tools be ineligible for participation in the pilots.

- For clarification, these tools may in fact be available to customers participating in the pilots; however, information provided to these customers by programs such as My Account may not be accurate because summary submeter billing usage and cost information will only be updated monthly.

- Submeter data will not be available for GreenButton download in MyAccount since the utility is not required to report this usage data through their customer web tools.

- SDG&E provides Peak Time Rebate (PTR) (a.k.a. Reduce Your Use) demand response incentives to eligible residential customers. Eligibility requires Smart Meter data in order to calculate rebates. Customer owned EV submeter data cannot currently be used to calculate PTR bill credits. SDG&E may be able to calculate

PTR credits using the unsubtracted primary meter data, but no separate credits can be calculated for the 3rd party submetered service point(s).

- SDG&E's Rate Analysis tool is not yet available within MyAccount for residential customers. Submeter data is currently not in scope for the Rate Analysis tool development. SDG&E may provide notification to participating customers of these limitations to SDG&E's service offering

The Resolution should include Updated Data Reporting and Transfer Requirements as part of the Final MDMA Registration Agreement

- Potential MDMAs and the IOUs have worked to refine EV Submeter Pilot Phase 1 Data Reporting and Transfer Requirements.[2] This work included two collaboration meetings on January 8 and April 8, 2014 which resulted in an updated document. Final MDMA comments and approval was requested by May 5, 2014. No comments were provided by MDMAs.

- SDG&E suggests the resolution replace the MDMA Data Reporting and Transfer Requirements with the attached version updated with potential MDMA inputs (please see Attachment A).

The Resolution Should Not Replace the Existing Tariff Definition of "Summary Bill" and "Premises"

- SDG&E request's that the Rule 1 definition of "Summary Bill" remains unchanged. The term "Summary Bill" refers to a customer statement which displays charges for two or more service accounts. It is not appropriate to modify the language in this instance because the Summary Bill may contain a detail of charges for accounts other than those participating in the EV Submetering Pilot.

- SDG&E further requests that the Rule 1 definition of "Premises" also remains unchanged. The terms "premises" and "account" have specific tariff meanings. The key issue is defining the primary IOU meter location for the subtractive billing process. It is not uncommon for an IOU to have an Electric Meter at a Service Point for an Account at a Customer Premises. The Premises can have multiple Service Points. The key information needed is to which Service Point the EV Submeter is electrically connected.

Note: Rule 1 defines "Premises" as follows: "All of the real property and apparatus employed in a single enterprise on an integral parcel of land undivided, excepting in the case of industrial, agricultural, oil field, resort enterprises and public or quasi-public institutions, by a dedicated or undedicated street, highway or other public thoroughfare or a railway. Automobile parking lots constituting a part of and adjacent to a single enterprise may be separated by an alley from the remainder of the premises served."

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[2] See SDG&E Advice Letter 2566-E, EV Submetering Pilot Phase 1 Submeter Data Management Agent Registration Agreement version 13.0 Attachment 1.

The Resolution Should Require MDMAs to Notify the CPUC of Termination of Pilot Service

- SDG&E recommends that the CPUC require the MDMAs to notify the CPUC whenever and at the time the MDMA terminates pilot service with the CPUC then, in turn, notifying the IOU(s) of each of these occurrences.

- This is consistent with the CPUC's Draft Resolution direction that the Utilities indicate that Energy Division will review the (MDMA) applications to maintain impartiality and consistency for MDMAs operating in multiple IOU territories, and consult with the IOUs if necessary.

ED Should Sponsor an IOU and Submeter MDMA Workshop Prior to Start of Phase 1 pilot.

- The IOUs encourage the ED to schedule and conduct a sponsored workshop prior to "go-live". With so many requirements and details imbedded in the process, it is critical that all the stakeholders meet and understand the details on how the pilot really works prior to "going live".

Conclusion

SDG&E respectfully requests that the Commission adopt SDG&E's proposed changes to the Draft Resolution. SDG&E's recommendations will facilitate the successful implementation of the submetering pilots, and will also minimize the cost impact to ratepayers.

Sincerely,

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Clay Faber
Director, Regulatory Affairs

cc: President Michael R. Peevey
      Commissioner Catherine J.K. Sandoval
      Commissioner Michael Picker
      Commissioner Michel P. Florio
      Commissioner Carla J. Peterman
      Edward Randolph, Director, Energy Division
      Timothy Sullivan, Acting Chief ALJ
      Karen Clopton, Acting General Counsel
      Damon Franz, Energy Division
      Adam Langton, Energy Division
      Noel Crisostomo, Energy Division
      Service List attached to DR E-4651

Attachment A

**EV Submeter Pilot Phase 1
Data Reporting and Transfer Requirements**

Attachment A
EV Submeter Pilot Phase 1
Data Reporting and Transfer Requirements

IOU & MDMA Suggested Updates

#	IOU Modifications Since Advice Letter filing:	Disposition
1	Change definition of "Read Date & Time" to beginning of interval start time.	Added to Document.
2	Add requirement for no partial day data processed, for which data is provided. (e.g., 96 intervals, assuming 15 minute intervals, for each day for SCE, SDG&E and PG&E C&I participants, or 24 intervals for PG&E residential participants. No partial day data processed.	Added to Document.
4	Add IOU specific file transfer methods (e.g., sFTP details), omitted from filed version.	Added to Document.
5	Use UTC time for Read Date & Time - a signed (Positive 64 bit integer value representing the number of seconds from midnight Jan 1, 1970, not counting leap second corrections to UTC (35 seconds through 2012).	Added to Document.
6	For read quantity, need to define how to handle crossover days to account for daylight savings time. In those instances, the data would come in 92 and 100 intervals as opposed to a fixed 96 intervals	Example provided to IOUs, on how to handle internal DST processes of UTC data.
7	Include ESPI XML definition for optional data transfer method.	Added to Document
8	Use unique ID field in alignment with ESPI standard.	Removed the 3rd Party UUID from the data definition.

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9	Data exceptions and enrollment transactions.	Added to Document
10	Customer UUID to be sent with Submeter Serial Number, not the customer Account Number, for consistence with EVSP Enrollment Data Format and to avoid additional transfers of sensitive data.	Updated the Provision of UUIDs to Submeter MDMAs section. Included in EVSP Enrollment Data Format.
	Comments from MDMA Collaboration 3/17/14:	
11	Discuss method to distinguish zero watt-hour intervals from missing intervals.	Existing requirements retained: MDMA fill missing data with zero values, including the case where utility service was interrupted to the customer. VEE processing are expected services of an MDMA in a non-pilot production environment.
12	Tighten up Read Date & Time definition to reflect UTC (what is 10:00 in UTC?)	Modified for clarity the Field Definition for Read Date & Time. Added UTC Time defined in Definitions section.
13	Clarify Spreadsheet file name structure – need date time component defined (PST, PDT, other?)	Modified for clarity the file name component YYYYMMDDHHMMSS. It is not to be used for file processing. Purpose is to determine sequence of files sent from an individual MDMA. Should be based on MDMA's local time as determined by MDMA.
14	Consider expanding Requirement for "IOUs recommend daily file transfers".	Expanded the Spreadsheet File Minimum Data Transfer Requirements to address this

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		concern.
15	Start hour recommendation, days lag expected (e.g., yesterday's data sent today).	Expanded the Spreadsheet File Minimum Data Transfer Requirements to address this concern.
16	Discuss File Transfer data security requirements and consistency between IOUs.	Each IOU is different in how they handle data file security; a single method is not operationally feasible.
17	Expand Enrollment Reporting. MDMA reporting a customer termination, MDMA drop out including customers to remove, MDMA change of submeter serial number.	Updated document for MDMA reporting a customer termination. No other reporting added.
18	Rules for submeter swap-out (e.g., require a new UUID?)	Dropped the need to include Submeter Serial Number in the Spreadsheet Data Format definition. MDMA does not need to inform IOU of submeter swap-out, but MDMA shall manage submeter data for the associated UUID. A unique UUID is required for each submeter at a customer's premise
19	Consider enrollment date vs. effective date to clarify expectations on when submeter data delivery should start and when Submetering billing should start. Document the separate and distinct	A MDMA may seek "pre-approve" of a participant by submitting a customer signed enrollment form, without submitting the "MDMA unique identifier for the submeter".

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	stages for "sign up", "provisioning", "testing/verification", "enrollment/live date" & "decommissioning/end date" reporting/processes that account for physical hardware installation, testing and beginning processing of data. Can we have at least 5-7 days of advance notice between the receipt of the "Enrollment Report" and the "Effective Date" when metering data is required? We would prefer that the "Enrollment Report" not appear after the "Effective Date" as it will require us to manually run reports for activity in arrears. We would like the upload of the metering data to be as automated as possible.	A completed enrollment form with the "MDMA Unique Identifier" which is provided by the MDMA, will begin the "5 day clock", (i.e., IOU has 5 days to complete enrollment). Once IOU has completed an enrollment, MDMA is sent the UUID and the effective date of the enrollment. Effective date is the first date IOU will accept data for submeter billing.
	End of Comments from MDMA Collaboration 3/17/14:	

INTRODUCTION

This document is intended to describe the data format and data transfer processes necessary for a Submeter Meter Data Management Agent (MDMA) participating in Phase 1 of the CPUC ordered Electric Vehicle (EV) Submetering Pilot (Pilot). Submeter MDMAs are expected to meet certain performance standards in the EV Submetering Pilot[1], including transferring submeter data to the California Investor Owned Utilities (IOUs) for the purpose of Subtractive Billing. This document provides information on EV Submeter data formats and transfer methods to be used in the Pilot.

Submeter MDMAs are expected to transfer Submeter Data to the Utilities using one of two methods: Either the Minimal Transfer Requirement, or the Alternative Transfer Option. The Utilities my offer the alternative option, but it may not be required of Submeter MDMA for the Pilot. Details to implement the Minimal Transfer Requirement are the focus of this ~~draft~~document.

Additional Submeter MDMA activities are beyond the scope of this document, such as the process for a Submeter MDMA to register with an IOU and to signup customers for the Electric Vehicle Submetering Pilot. These additional activities are referenced herein, but the details are outside of the scope of this document. ~~See Relevant References item 1, 2 and 3.~~

TERMS AND DEFINITIONS

CSV – Comma Separated Values. The spreadsheet file format used in the Minimal Transfer Requirement. It is also a format used for Green Button subscription files.

DUNS number - Data Universal Numbering System. A nine digit number assigned by Dun & Bradstreet unique to a single business entity.

NAESB - North American Energy Standards Board. NAESB is the standards organization that created the ESPI standard, which is used by Green Button.

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[1] See: Phase One Performance Standards For Metering And Meter Data Agents Participating In California's Electric Vehicle Submetering Pilot

UTC Time - Coordinated Universal Time (UTC). A signed positive 64 bit integer value representing the number of seconds from midnight Jan 1, 1970, in UTC, not counting leap second corrections to UTC (35 seconds through 2012). So 5:00 PM EDT on September 22, 2013, has a UTC Time value of 1379883600")

UUID - Universally Unique Identifier. UUID is used to identify entities such as Customer and Submeter MDMAs.

DATA FORMATS

This section describes the data file formats to be used in the Pilot. The two data formats available for this pilot are a Spreadsheet file format or the Green Button XML format. The spreadsheet format is for the Minimal Transfer Requirement.

Minimal Transfer Requirement

The spreadsheet data file format and name conventions are described below.

Spreadsheet Data Format

The Spreadsheet format is a simplified derivation of the Green Button XML format. The spreadsheet format allows Submeter MDMAs to transfer in one file EV Submeter data for multiple submeters and multiple days. The spreadsheet includes field headers with the following titles and meeting. The spreadsheet shall be transmitted in CSV file format.

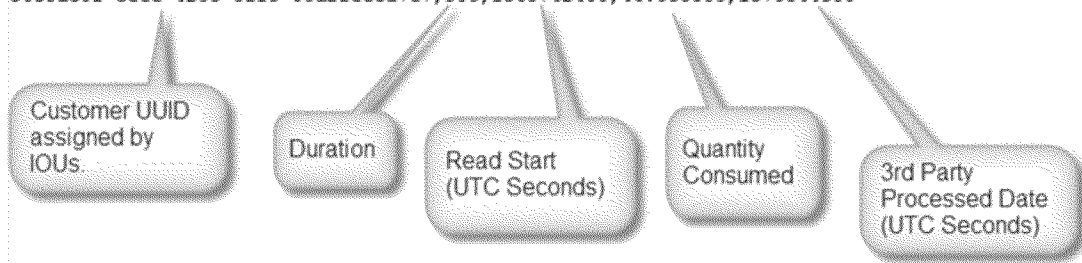| Field Title	Field Description
3rd Party UUID	Assigned by IOU after the Submeter MDMA completes registration with the IOU.
Customer UUID	Assigned by IOU after a Registered Submeter MDMA completes the Customer enrollment with the IOU.
Submeter Serial Number	The submeter device identifier provided by the Submeter MDMA during the Customer enrollment process. The Submeter Serial Number is unique to each 3rd Party. (Formatted alpha-numeric)
Interval Duration	Duration of data interval for the Read Quantity represented in seconds. Interval Duration is either "0900" for 15 minute intervals or "3600" for 60 minute intervals.

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		Interval Duration is specified by the IOU based on the Primary Meter's unit of measure and/or the IOU's Subtractive Billing processes.
	Read Date & Time	Date & Time for the ~~end~~ start (beginning) of the data interval. Read Date & Time is expected to be at the top of the hour for 60 minute intervals (~~i.e.,~~e.g., UTC Time equivalent of 10:00 am, 11:00 am,), or on the quarter hour for 15 minute intervals (~~i.e.,~~e.g., UTC Time equivalent of 10:15 am, 10:30 am, 10:45 am, 11:00 am). A read Date & Time record is required for every interval every day, even when the Read Quantity is zero. (Formatted UTC Time, see terms and definitions)
	Read Quantity	Interval value in Watt hours. (Formatted Decimal 12/6 with zero padding on the right, and none on the left)
	Date Processed	Date the data was loaded into the spreadsheet by Submeter MDMA~~s~~. (Formatted UTC Time, see terms and definitions)

Below is an example of the spreadsheet file: (UTC Seconds in the example represent UTC Time)

```
36c8dc0f-ceee-4203-8ff9-05d2feeca7e7,900,1369728900,40.640000,1370844900
36c8dc0f-ceee-4203-8ff9-05d2feeca7e7,900,1369729800,41.120000,1370844900
36c8dc0f-ceee-4203-8ff9-05d2feeca7e7,900,1369730700,43.040000,1370844900
36c8dc0f-ceee-4203-8ff9-05d2feeca7e7,900,1369731600,41.280000,1370844900
36c8dc0f-ceee-4203-8ff9-05d2feeca7e7,900,1369732500,39.840000,1370844900
36c8dc0f-ceee-4203-8ff9-05d2feeca7e7,900,1369733400,39.360000,1370844900
36c8dc0f-ceee-4203-8ff9-05d2feeca7e7,900,1369734300,40.000000,1370844900
36c8dc0f-ceee-4203-8ff9-05d2feeca7e7,900,1369735200,40.000000,1370844900
36c8dc0f-ceee-4203-8ff9-05d2feeca7e7,900,1369736100,39.200000,1370844900
36c8dc0f-ceee-4203-8ff9-05d2feeca7e7,900,1369737000,40.160000,1370844900
36c8dc0f-ceee-4203-8ff9-05d2feeca7e7,900,1369737900,40.000000,1370844900
36c8dc0f-ceee-4203-8ff9-05d2feeca7e7,900,1369738800,45.440000,1370844900
36c8dc0f-ceee-4203-8ff9-05d2feeca7e7,900,1369739700,45.280000,1370844900
36c8dc0f-ceee-4203-8ff9-05d2feeca7e7,900,1369740600,43.520000,1370844900
36c8dc0f-ceee-4203-8ff9-05d2feeca7e7,900,1369741500,38.880000,1370844900
36c8dc0f-ceee-4203-8ff9-05d2feeca7e7,900,1369742400,46.080000,1370844900
```

Customer UUID assigned by IOUs.

Duration

Read Start (UTC Seconds)

Quantity Consumed

3rd Party Processed Date (UTC Seconds)

Spreadsheet File Minimum Data Transfer Requirements

To facilitate data processing and possible data troubleshooting, minimum data transfer requirement are defined.
1. No partial day data will be processed by the IOU.
   a. Spreadsheet files shall contain a minimum of 24 hours of interval data. (e.g., 96 consecutive intervals assuming 15 minute intervals, or 24 consecutive intervals assuming 60 minute intervals.)
   b. Spreadsheet files shall contain a read Date & Time record for every interval, even when the interval's Read Quantity is a zero or a missing value.
   c. Missing values shall be represented with a zero values.
   d. SCE and SDG&E expect 96 consecutive intervals in a day; PG&E expects 24 consecutive intervals in a day for Residential submeters and 96 consecutive intervals in a day for Commercial & Industrial submeters.
2. IOUs recommend daily file transfers.
   a. Daily file transfers may contain Date & Time records for multiple days.

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  b. Daily file transfers containing Date & Time records for multiple days, shall contain all expected consecutive intervals (e.g., no missing intervals or gaps in intervals)

  c. Daily file transfers may contain repeated or corrected Date & Time records. IOU will use the most recently received and processed interval record(s), when billing the submeter data. IOU may not correct Date & Time records for intervals previously billed.

3. Date & Time records should not be delayed by more than three days. Records delayed by three or more days may not be processed for billing, due to the Pilot requirement that meter data is to be sent 3 days after the customer's billing period.

Spreadsheet File Name Structure

The CSV spreadsheet files transferred by the Submeter MDMA to SCE/PG&E/SDG&E shall use the following file naming structure:

"MDMA-DUNS_IOU-DUNS_EVSP_YYYYMMDDHHMMSS.CSV"

File Name Component	Component Description
MDMA-DUNS	The nine digit DUNS Number of the Submeter ~~MDMA registered~~MDMA registered with the IOU and provided to the IOU as part of the Submeter MDMAs Registration process. (Format numeric 9, all formatting dashes omitted)
IOU-DUNS	The nine digit DUNS Number of the IOU and provided by the IOU as part of the Submeter MDMA Registration process. (Format numeric 9, All formatting dashes omitted)
EVSP	Hard coded "EVSP" to identify the file as part of the EV Submetering pilot application.
YYYYMMDDHHMMSS	The date and time the spreadsheet file was created by the Submeter MDMA, ~~-~~ based on MDMA's local time as determined by MDMA. Purpose of this file name component is to determine time sequence of files sent from an individual MDMA.
Example file name: "987654321_123456789_EVSP_20130428245959.csv"	

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Provision of UUIDs to Submeter MDMAs

The provisioning of UUIDs consists of transferring the ~~3rd Party UUID and the~~ Customer UUIDs from the IOU to the Submeter MDMA. ~~The 3rd Party UUIDs are assigned by IOU after the MDMA's approved registration into the EV Submetering Pilot~~. The Customer UUIDs are assigned by IOU after the MDMA's approved registration into the EV Submetering Pilot, and after a Registered Submeter MDMA submits a valid Customer Enrollment form ~~with~~ to IOU. The Customer UUIDs are sent by encrypted email from IOU to the MDMA or by the EVSP Enrollment report described below in section Enrollment and Exception Reporting to Submeter MDMAs.~~.~~

The Customer UUIDs will be sent to the Submeter MDMA in a CSV file containing both the UUID and the corresponding ~~submeter~~ Unique Submeter Device Identifier (aka, Submeter Serial Number) ~~account number~~ for the customer's service. See EVSP Enrollment Data Format below for more details.

DATA TRANSFER METHODS

The IOUs each have slightly different methods to send and receive Minimal Transfer Requirement spreadsheet files and Green Button XML format files. This section describes those methods.

Pacific Gas & Electric Data Transfer Method

PG&E uses sFTP to receive both the Spreadsheet Format and Greenbutton Format data files from MDMAs. For the phase 1 pilot, PG&E will only support receiving the Spreadsheet format from MDMAs and only provide MDMAs enrollment files (no providing of Exception Reporting files for phase 1).

PGE&'s preference is for MDMAs to push data files to our hosted sFTP servers (Inbound) and to pull enrollment files from our SFTP servers (outbound).

Per PG&E's preferred method, PG&E will provide MDMAs the following information:

1. IP Address
2. Assigned Username

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3. Password or log in key (for key connectivity)
4. MDMAs to provide PG&E:
   a. Name, email, and telephone number of MDMA's connectivity contact person(s).
   b. Filename(s)

If file encryption is required, PG&E will provide the MDMA with PG&E's PGP Public Key.

If necessary, PG&E can support pulling data files from MDMAs external servers (inbound) and pushing enrollment files to MDMA servers (outbound). To support this, PG&E will require the following information from the registered MDMA:

Files Inbound to PG&E:

1. SSH2 RSA 2048-bit key. This is used for validating the sFTP Connection. PG&E does use passwords as an alternative.
2. Hostname / IP address
3. Download folder path
4. Filename(s)
5. Name, email, and telephone number of MDMA's connectivity contact person(s).

Files Outbound from PG&E:

1. Hostname / IP address
2. Username
3. Password (or log-in key will need to be exchanged)
4. Upload folder path
5. Name, email, and telephone number of MDMA's connectivity contact person(s).

If file encryption is required, PG&E will provide the MDMA with PG&E's PGP Public Key.

San Diego Gas & Electric Data Transfer Method

SDG&E uses sFTP to receive both the Spreadsheet Format and Greenbutton Format data files from MDMAs, and send Error and Exception files to MDMAs. SDG&E will require the following from the Registered MDMA:

Files Inbound to SDG&E:
1) SSH2 RSA 2048-bit key. This is used for validating the sFTP Connection. SDG&E does not use Passwords.

2)   MDMA's IP address
3)   Filename(s)
4)   Name, email, and telephone number of MDMA's connectivity contact person(s).

Once SDG&E receives the items above, then SDG&E's Network Team will set up the internal Firewall to accept MDMA files. SDG&E will provide the MDMA with a sFTP logon ID and other Details to start Connectivity Testing.

Files Outbound from SDG&E:

1)   SSH2 RSA 2048-bit key. This is used for validating the sFTP Connection. SDG&E does not use Passwords.
2)   Receive SDG&E's SSH Keys and IP address, one for testing and one for production.
3)   Provide to SDG&E:
        a.   Server DNS, if possible one for testing and one for production.
        b.   Logon IDs for SDG&E, if possible one for testing and one for production.
        c.   Drop-off path for SDG&E, if possible one for testing and one for production.

If file encryption is required, SDG&E will provide the MDMA with SDG&E's PGP Public Key.

Southern California Edison Data Transfer Method

SCE will use sFTP to receive both the Spreadsheet Format and Greenbutton Format data files from MDMAs, and send Error and Exception files to MDMAs.

Files Inbound to SCE*:

SCE will require the following from the Registered MDMA:

1)   SCE will use Password authentication for inbound sFTP file transfers. SCE will provide credentials to MDMA. SCE does use Passwords.
2)   MDMA's IP address (Should be static IP)
3)   Filename(s)
4)   Name, email, and telephone number of MDMA's connectivity contact person(s).
5)   Once SCE receives the items above, then SCE Team will set up the Firewall to accept MDMA files. SCE will provide the MDMA with a sFTP logon ID and other Details to start Connectivity Testing

Files Outbound from SCE*:

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Following information is required from MDMA for transferring outbound files (SCE to MDMA)

1)   IP Address/Host
2)   User/Password, if password authentication.
3)   Drop off location (Directory)
4)   Name, email, and telephone number of MDMA's connectivity contact person

*If file encryption is required, SCE will provide the MDMA with SCE's PGP Public Key

ENROLLMENT AND EXCEPTION REPORTING TO SUBMETER MDMAS

Enrollment information and reporting of errors or exceptions in the submeter CSV Spreadsheet format from SCE/PG&E/SDG&E to Submeter MDMA may be provided in CSV formats described below. These reporting CSV files will be transferred from SCE/PG&E/SDG&E to the Submeter MDMA using the outbound Data Transfer Methods described above.

Enrollment and Exception Reporting File Name Structure

The CSV files transferred by SCE/PG&E/SDG&E to Submeter MDMA shall use the following file naming structure:

"MDMA-DUNS_IOU-DUNS_EVSPENROLLMENTS_YYYYMMDDHHMMSS.CSV"
"MDMA-DUNS_IOU-DUNS_EVSPEXCEPTIONS_YYYYMMDDHHMMSS.CSV"

See the Spreadsheet File Name Structure section above for additional description of the file name components.

EVSP Enrollment Data Format:

Field Title	Field Description
Transaction Type	Valid values are: · "New Enrollment"

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	· "Enrollment Termination" (Formatted alpha-numeric)
Customer UUID	Assigned by IOU after a Registered Submeter MDMA completes the Customer enrollment with the IOU. The "New Enrollment" transaction file is the vehicle to initially transmit the UUID to the MDMA. Submeter MDMA will receive a Customer UUID for every Unique Submeter Device Identifier.
Unique Submeter Device Identifier	The Unique Submeter Device Identifier (aka Submeter Serial Number on the Customer Enrollment Form) provided by the Submeter MDMA during the Customer enrollment process. This identifier is unique to each submeter and provided by the MDMA. This identifier is expected not to change during the Phase I pilot. In the event of a submeter replacement, MDMA shall report data for the replacement submeter using the previously assigned Customer UUID. (Formatted alpha-numeric maximum 17 characters)
Effective Date	First date IOU will accept Submeter data from the MDMA. (Formatted UTC Time, see terms and definitions)
Termination Date	Date of the last day the EV submetering data will be used for subtractive billing. A new enrollment will not have a Termination Data (blank field); an Enrollment Termination will have a Termination date. For the Phase I pilot an Enrollment Termination will be sent after the 11th billing month. MDMA are expected to submit to IOU an Enrollment Termination, in the event their customer discontinues Submetering service. (Formatted UTC Time, see terms and definitions)

EVSP Exception Data Format:

If the IOU processing the MDMA's submetering data detects an error or exception within the spreadsheet data file, the IOU, at its own discretion, may elect to provide the MDMA with an exception notice. One method of sending an exception notice from the IOU to the submeter MDMA is an Exception Data file in the following format:

Field Title	Field Description

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Customer UUID	Assigned by IOU after a Registered Submeter MDMA completes the Customer enrollment with the IOU.
Originating File Name	CSV file name provided by the Submeter MDMA which generated the exception (formatted MDMA-DUNS_IOU-DUNS_EVSP_YYYYMMDDHHMMSS.CSV)
Date Processed	Date Processed by SCE/SDG&E/PG&E. (Formatted UTC Time, see terms and definitions)
Exception Error	A description of the error generated by the CSV file provided by the Submeter MDMA. Example exception-errors may include: • Invalid Enrollment - Customer and/or Device Invalid. • Invalid Data - Negative Values not allowed. • Invalid Data - Partial Data Found. • Invalid Data - Data received that is before or after the enrollment. • Invalid Enrollment - Customer and/or Device Invalid. (Formatted alpha-numeric, up to 255 characters)

ALTERNATIVE TRANSFER OPTION (GreenButton format)

The IOUs my offer an alternative data transfer option, but the option may not be required of Submeter MDMA for the Pilot. The Alternative option described in this document is the Extensible Markup Language (XML) Green Button format.

The expected XML data format for EV Submetering data is the forthcoming NAESB Green Button Connect My Data standard for bulk transfer (Bulk Standard). This forthcoming standard is under development by NAESB and expected to be completed in early 2014.

The XML format for the Bulk Standard is a modification of the NAESB Green Button Connect XML[2]. The batch modifications to the Green Button Connect XML are outlined in the document titled Authorization and Bulk Transfer in Green Button Connect My Data.[3] Section 2.5 of the document describes Use Case #13: Bulk Transfer of Multiple Authorized Resources.

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[2] See REQ.21 – Energy Services Provider Interface, NAESB 2010, http://www.naesb.org/ESPI_Standards.asp
[3] See: http://osgug.ucaiug.org/sgsystems/OpenADE/Shared%2520Documents/Testing%2520and%2520Certif

Please note the majority of the document titled Authorization and Bulk Transfer in Green Button Connect My Data, relates to an OAuth Authorization method which is not utilized in the EV Submetering Pilot.

Imbedded below is the ESPI Bulk Schema as of 12/27/2013:

End of Document

ication/GreenButtonTestPlan/referenceMaterial/GreenButtonAuthorization.docx&sa=U&ei=mhFYU9P
oLYWryAT1jYHoCQ&ved=0CBsQFjAA&usg=AFQjCNEwqtjaVvo3Al6tgJlkeBnCt_3C1g