DOCKETED	
Docket Number:	18-MISC-05
Project Title:	Disaggregated Demand Data Cleaning Workshop
TN #:	226075
Document Title:	Presentation - Draft Methods for Collecting and Processing Disaggregated Demand Data
Description:	Presentation by Jason Harville at the December 11 Energy Commission staff workshop regarding draft ETL methods for data described in Section 1353 of the California Code of Regulations, Title 20.
Filer:	Steve Mac
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	12/12/2018 8:49:45 AM
Docketed Date:	12/12/2018

Draft Methods for Collecting and Processing Disaggregated Demand Data Under California Code of Regulations, Title 20, Section 1353



Jason Harville December 11, 2018 California Energy Commission



10:00 Welcome Remarks, Commissioner McAllister, CEC 10:15 Purpose and Objectives

- Purpose and Scope
- Background
- Title 20, Section 1353
- 10:30 Data Contents and Structure
 - Source data ID fields
 - Source data table schema
 - Known unknowns
- 11:30 Data Cleaning and Transforming
 - Transformation rules and ETL process
- 12:00 Lunch

01:00 Open Discussion All Participants02:00 Public Comments All Participants02:45 Next Steps



- 1. Describe draft methods for collecting and processing meter-level data under Title 20, Section 1353.
- 2. Explain known unknowns.
- 3. Solicit discussion and feedback.
- 4. Provide context for written comments.
- 5. Use feedback and comments to finalize methods in January 2019.



- This workshop will not address technical details of data security, confidentiality, or transmission.
- Energy Commission staff will work with utilities' technical staff to address these issues.



- Recently-enacted legislation^{*} requires disaggregated analytical products.
- This includes the hourly and seasonal impact of energy efficiency targets on state and local electricity demand.
- Also provides for data collection authority, which was adopted in California Code of Regulations, Title 20, Section 1353.



- Data collection begins in 2019, and will be delivered quarterly.
- Requires electrical and natural gas data for utilities that meet respective service thresholds.
- Includes interval meter data at the most granular level collected.



Electricity Data

- Applies to PG&E, SCE, SDG&E, SMUD, and LADWP.
- For each meter, requires
 - Monthly billing data.
 - Monthly consumption data.
 - Interval consumption data (interval meters only).
 - Associated data, such as address, NAICS code, rate schedule, and energy efficiency participation.
- For unmetered consumption, requires
 - Estimated consumption by service account.
 - Associated data.



Natural Gas Data

- Applies to PG&E, SDG&E, and SoCalGas.
- For each meter, requires
 - Monthly billing data.
 - Monthly consumption data.
 - Associated data, such as address, NAICS code, rate schedule, and energy efficiency participation.



Clarifications and Changes

Pages 5-8 of the draft methods identify areas of the regulation that should be clarified to remove ambiguity, explicitly name additional required data fields, and resolve current requirements that are inefficient or infeasible.

Staff will work to address these issues in the next phase of our data collection rulemaking.



Two Sections

- 1. Source Data: Describes data fields and table schema for utilities to report.
- 2. Methods: Describes general ETL* flow and transformation rules for processing source data.

Note: The attached data dictionary supports both of these sections.



- Goal: Efficiently structure incoming data to minimize utility burden, data complexity, and processing difficulty.
- Strategy: Require data in a partially-normalized table structure that is consistent across utilities.
 - Balances data size and complexity.
 - Standardizes to reduce future burden and complexity.
 - Implicitly reports historical changes.



Four identification fields

- 1. Service Account
- 2. Premise
- 3. Service Point
- 4. Meter

Relationships (M == 'many')

	Premiseld	ServicePointId	Meterld
ServiceAccountId	M - M	1 - M	1 - M
Premiseld		1 - M	1 - M
ServicePointId			1 - M



BillingChargesElec ServiceAccountId PeriodStart TimeZoneStart PeriodEnd TimeZoneEnd BillCharge	BillingConsumptionElec MeterId ServiceAccountId PremiseId ServicePointId PeriodStart TimeZoneStart PeriodEnd TimeZoneEnd	IntervalConsumptionElec MeterId ServiceAccountId PremiseId ServicePointId IntervalEndTime IntervalLength TimeZone KwhDelivered	c PremiseElec PremiseId FullAddress StreetNumber HouseFractionNumber StreetPrefix StreetSuffix Building	•	Billing Charges Includes record for each service
BillingChargesCan	KwhNet IsKwhNetEstimated IsKwhNetUnmetered NaicsCode RateScheduleCode CommunityChoiceAggCode DirectAccessCode	IsKwhDeliveredEstimate KwhReturned IsKwhReturnedEstimate	ed Unit City ed State Zip Zip4		account and each billing cycle for which there were charges.
BillingChargesGas ServiceAccountId PeriodStart TimeZoneStart PeriodEnd TimeZoneEnd BillAmount	BillingConsumptionGas MeterId ServiceAccountId PremiseId ServicePointId PeriodStart TimeZoneStart PeriodEnd TimeZoneEnd Therms IsThermsEstimated NaicsCode RateScheduleCode DirectAccessCode		PremiseGas PremiseId FullAddress StreetNumber HouseFractionNumber StreetPrefix StreetSuffix Building Unit City State Zip Zip4	•	Includes only charges accrued during that billing cycle. Raises questions about partial billing reporting, such as when energy charges are via a direct
RateSchedule RateScheduleCode RateScheduleName RateScheduleDesc	CommunityChoiceAgg CommunityChoiceAggCode CcaName CcaDesc	DirectAccess DirectAccessCode DaProviderName DaProviderDesc	EnergyEfficiencyParticipation ServiceAccountId EeMeasureCode PremiseId EeProgramCode StartDate EndDate ClaimDate		access agreement.
		EnergyEfficiencyPrograms EeProgramCode EeProgramName EeProgramDesc	EnergyEfficiencyMeasures EeMeasureCode EeMeasureName EeMeasureDesc		13



BillingChargesElec ServiceAccountId PeriodStart TimeZoneStart BoriodEnd	BillingConsumptionElec MeterId ServiceAccountId PremiseId ServiceDeintId	IntervalConsumptionEle MeterId ServiceAccountId PremiseId ServiceBeinId	PremiseElec PremiseId FullAddress StreetNumber HouseErsctionNumber		Monthly Consumption
TimeZoneEnd BillCharge	PeriodStart TimeZoneStart PeriodEnd TimeZoneEnd KwhNet IsKwhNetEstimated IsKwhNetUnmetered NaicsCode RateScheduleCode CommunityChoiceAggCode DirectAccessCode	IntervalEndTime IntervalLength TimeZone KwhDelivered IsKwhDeliveredEstimat KwhReturned IsKwhReturnedEstimat	StreetPrefix StreetName StreetSuffix Building Unit City ed State Zip Zip4	•	Includes record for each meter and each billing cycle for which the meter was active.
BillingChargesGas ServiceAccountId PeriodStart TimeZoneStart PeriodEnd TimeZoneEnd BillAmount	BillingConsumptionGas MeterId ServiceAccountId PremiseId ServicePointId PeriodStart TimeZoneStart PeriodEnd TimeZoneEnd Therms IsThermsEstimated NaicsCode RateScheduleCode DirectAccessCode		PremiseGas PremiseId FullAddress StreetNumber HouseFractionNumber StreetPrefix StreetName StreetSuffix Building Unit City State Zip Zip4	•	Allows reporting of unmetered consumption estimates by leaving non-applicable fields NULL. Includes codes for rate schedule, CCAs, and direct access lookup
RateSchedule RateScheduleCode RateScheduleName RateScheduleDesc	CommunityChoiceAgg CommunityChoiceAggCode CcaName CcaDesc	DirectAccess DirectAccessCode DaProviderName DaProviderDesc	EnergyEfficiencyParticipation ServiceAccountId EeMeasureCode PremiseId EeProgramCode StartDate EndDate ClaimDate	•	tables. Raises question of whether unmetered consumption should
	E	inergyEfficiencyPrograms EeProgramCode EeProgramName EeProgramDesc	EnergyEfficiencyMeasures EeMeasureCode EeMeasureName EeMeasureDesc		have its own table.



BillingChargesElec	BillingConsumptionElec	IntervalConsumptionEle	c PremiseElec	
ServiceAccountId	MeterId	MeterId	PremiseId	
PeriodStart	ServiceAccountId	ServiceAccountId	FullAddress	LLA
TimeZoneStart PeriodEnd TimeZoneEnd BillCharge	PremiseId ServicePointId PeriodStart TimeZoneStart PeriodEnd TimeZoneEnd KwhNet IsKwhNetEstimated IsKwhNetUnmetered NaicsCode RateScheduleCode CommunityChoiceAggCode DirectAccessCode	PremiseId ServicePointId IntervalEndTime IntervalLength TimeZone KwhDelivered IsKwhDeliveredEstimat KwhReturned IsKwhReturnedEstimate	StreetNumber HouseFractionNumber StreetPrefix StreetSuffix Building ed Unit City ed State Zip Zip4	 Lookup or direct associat cycle.
BillingChargesGas	BillingConsumptionGas		PremiseGas	
ServiceAccountId	MeterId		PremiseId	
PeriodStart	ServiceAccountId		FullAddress	
TimeZoneStart	PremiseId		StreetNumber	- included
PeriodEnd	ServicePointId		HouseFractionNumber	unknow
TimeZoneEnd	PeriodStart		StreetPrefix	UNKNOW
BillAmount	TimeZoneStart DeriodEnd		StreetName	
	TimeZoneEnd		Building	
	Therms		Unit	
	IsThermsEstimated		City	
	NaicsCode		State	
	RateScheduleCode		Zip	
	DirectAccessCode		ZIP4	
RateSchedule	CommunityChoiceAge	DirectAccess	EnergyEfficiencyParticipation	
RateScheduleCode	CommunityChoiceAgg	DirectAccess	ServiceAccountId	
RateScheduleCode	Cashama	DePresidentiana	FeMeasureCode	
RateScheduleDesc	CcaDesc	DaProviderDesc	PremiseId	
RateScheduleDesc	Ceapese	DarioviderDesc	EeProgramCode	
			StartDate	
			EndDate	
			ClaimDate	
		EnergyEfficiencyPrograms	EnergyEfficiencyMeasures	
		FeProgramCode	FeMeasureCode	
		EeProgramName	EeMeasureName	
		EeProgramDesc	EeMeasureDesc	
		10000	L	i

CCA and Direct Access

- Lookup tables to identify which CCA or direct access provider a meter is associated with in a given billing cycle.
- Included to resolve issue of unknown partial billing.



BillingChargesElec	BillingConsumptionElec	IntervalConsumptionEle	c PremiseElec	
ServiceAccountid PeriodStart TimeZoneStart PeriodEnd TimeZoneEnd BillCharge	Meteria ServiceAccountId PremiseId ServicePointId PeriodStart TimeZoneStart PeriodEnd TimeZoneEnd KwhNet IsKwhNetEstimated IsKwhNetUnmetered NaicsCode RateScheduleCode CommunityChoiceAggCode DirectAccessCode	Meteria ServiceAccountId PremiseId ServicePointId IntervalLength TimeZone KwhDelivered IsKwhDeliveredEstimate KwhReturned IsKwhReturnedEstimate	FremSeld FullAddress StreetNumber HouseFractionNumber StreetPrefix StreetSuffix Building Unit City State Zip Zip4	 Rate Schedules Lookup table for rate schedule codes provided with each billing cycle.
BillingChargesGas ServiceAccountId PeriodStart TimeZoneStart PeriodEnd TimeZoneEnd BillAmount	BillingConsumptionGas MeterId ServiceAccountId PremiseId ServicePointId PeriodStart TimeZoneStart PeriodEnd TimeZoneEnd Therms IsThermsEstimated NaicsCode RateScheduleCode DirectAccessCode		PremiseGas PremiseId FullAddress StreetNumber HouseFractionNumber StreetPrefix StreetName StreetSuffix Building Unit City State Zip Zip4	 May need to include additional flags for options and modifiers. Raises question of how rate schedules should be fully specified in this table structure.
RateSchedule RateScheduleCode RateScheduleName RateScheduleDesc	CommunityChoiceAgg CommunityChoiceAggCod CcaName CcaDesc	DirectAccess DirectAccessCode DaProviderName DaProviderDesc	EnergyEfficiencyParticipation ServiceAccountId EeMeasureCode PremiseId EeProgramCode StartDate EndDate ClaimDate	
		EnergyEfficiencyPrograms EeProgramCode EeProgramName EeProgramDesc	EnergyEfficiencyMeasures EeMeasureCode EeMeasureName EeMeasureDesc	16



BillingChargesElec ServiceAccountId PeriodStart TimeZoneStart PeriodEnd TimeZoneEnd BillCharge	BillingConsumptionElec MeterId ServiceAccountId PremiseId ServicePointId PeriodStart TimeZoneStart PeriodEnd TimeZoneEnd KwhNet IsKwhNetEstimated IsKwhNetUnmetered NaicsCode	IntervalConsumptionElecPremiseElecMeterIdPremiseIdServiceAccountIdFullAddressPremiseIdStreetNumberServicePointIdHouseFractionNumberIntervalEndTimeStreetPrefixIntervalLengthStreetSuffixKwhDeliveredBuildingIsKwhReturnedCityIsKwhReturnedEstimatedStateZipZip	 Includ interva zero re
	CommunityChoiceAggCode DirectAccessCode	2104	
BillingChargesGas ServiceAccountId PeriodStart TimeZoneStart PeriodEnd TimeZoneEnd BillAmount	BillingConsumptionGas MeterId ServiceAccountId PremiseId ServicePointId PeriodStart TimeZoneStart PeriodEnd TimeZoneEnd Therms IsThermsEstimated NaicsCode RateScheduleCode DirectAccessCode	PremiseGas PremiseId FullAddress StreetNumber HouseFractionNumber StreetPrefix StreetName StreetSuffix Building Unit City State Zip Zip4	 Interva shorte metera Separa (to the grid)
RateSchedule RateScheduleCode RateScheduleName RateScheduleDesc	CommunityChoiceAgg CommunityChoiceAggCo CcaName CcaDesc	DirectAccess EnergyEfficiencyParticipation DirectAccessCode ServiceAccountId DaProviderName PremiseId DaProviderDesc StartDate EnergyEfficiencyPrograms EnergyEfficiencyMeasures EeProgramCode EeMeasureCode EeProgramCode StartDate EeProgramCode EnergyEfficiencyMeasures EeProgramName EeMeasureCode EeProgramDesc EeMeasureDesc	griu).

Interval Consumption

- Includes a record for each active interval meter reading, including zero readings.
- Interval lengths should be the shortest intervals recorded by each meter.
- Separately records data deliveries (to the meter) and returns (to the grid).



BillingChargesElec	BillingConsumptionElec	IntervalConsumptionEle	PremiseElec	
ServiceAccountId	MeterId	MeterId	PremiseId	
PeriodStart	ServiceAccountId	ServiceAccountId	FullAddress	
TimeZoneStart PeriodEnd TimeZoneEnd BillCharge	PremiseId ServicePointId PeriodStart TimeZoneStart PeriodEnd TimeZoneEnd KwhNet IsKwhNetEstimated IsKwhNetUnmetered NaicsCode RateScheduleCode CommunityChoiceAggCode DirectAccessCode	PremiseId ServicePointId IntervalEndTime IntervalLength TimeZone KwhDelivered IsKwhDeliveredEstimat KwhReturned IsKwhReturnedEstimat	StreetNumber HouseFractionNumber StreetPrefix StreetSuffix Building Unit City State Zip Zip4	 Stores add Utilities' staddresses
BillingChargesCas	BillingConsumptionCos		Dramino Can	
ServiceAccountId	MeterId		PremiseId	premise le
DeriodStart	ServiceAccountId		FullAddress	
TimeZoneStart	PremiseId		StreetNumber	point or m
PeriodEnd	ServicePointId		HouseFractionNumber	
TimeZoneEnd	PeriodStart		StreetPrefix	
BillAmount	TimeZoneStart DeriodEnd		StreetName	
	TimeZoneEnd		Building	 Each record
	Therms		Unit	
	IsThermsEstimated		City	Address, a
	NaicsCode RateScheduleCode		State	
	DirectAccessCode		Zip4	entire add
RateSchedule	CommunityChoiceAgg	DirectAccess	EnergyEfficiencyParticipation	
RateScheduleCode	CommunityChoiceAggCod	e DirectAccessCode	ServiceAccountId	
RateScheduleName	CcaName	DaProviderName	EeMeasureCode	 Other add
RateScheduleDesc	CcaDesc	DaProviderDesc	PremiseId	and a standard set
			EeprogramCode	reported s
			StartDate	-
			ClaimDate	
	I			
		EnergyEfficiencyPrograms	EnergyEfficiencyMeasures	
		EeProgramCode	EeMeasureCode	
		EeProgramName EeProgramDosc	EeMeasureName	
		ceriogramoesc	cenedsureDesc	

Location

- Stores address for each premise.
- Utilities' staff indicate that addresses are assigned at the premise level, rather than service point or meter.
- Each record should have a 'Full Address', a single text field with the entire address.
- Other address components reported separately if available.



BillingChargesElec ServiceAccountId PeriodStart TimeZoneStart PeriodEnd TimeZoneEnd BillCharge	MeterId MeterId ServiceAccountId ServiceAccountId PremiseId PremiseId ServicePointId ServicePointId PeriodStart IntervalEndTime TimeZoneStart IntervalLength TimeZoneEnd KwhDelivered		PremiseLlec PremiseLlec PremiseLd FullAddress StreetNumber HouseFractionNumber StreetPrefix StreetSuffix Building Unit		Energy Efficiency EE participation reported by premise and EE measure for each installed measure
	IsKwhNetEstimated IsKwhNetUnmetered NaicsCode RateScheduleCode CommunityChoiceAggCode DirectAccessCode	KwhReturned IsKwhReturnedEstima	City ted State Zip Zip4		linked to a premise.
BillingChargesGas ServiceAccountId	BillingConsumptionGas MeterId		PremiseGas PremiseId	•	Programs and measures tables are lookups.
PeriodStart TimeZoneStart PeriodEnd TimeZoneEnd BillAmount	ServiceAccountId PremiseId ServicePointId PeriodStart TimeZoneStart PeriodEnd TimeZoneEnd Therms IsThermsEstimated NaicsCode RateScheduleCode DirectAccessCode		FullAddress StreetNumber HouseFractionNumber StreetPrefix StreetSuffix Building Unit City State Zip Zin4	•	Fields modeled after CPUC's CEDARS database fields. Raises questions:
RateSchedule RateScheduleCode RateScheduleName RateScheduleDesc	CommunityChoiceAgg CommunityChoiceAggCo CcaName CcaDesc	DirectAccess DirectAccessCode DaProviderName DaProviderDesc	EnergyEfficiencyParticipation ServiceAccountId EeMeasureCode PremiseId EeProgramCode StartDate EndDate ClaimDate		 Can IOUs provide data to join to CEDARS in lieu of this EE reporting? Can POUs report equivalent data? Is this sufficient to measure EE impacts at the meter level?
		EnergyEfficiencyPrograms EeProgramCode EeProgramName EeProgramDesc	EnergyEfficiencyMeasures EeMeasureCode EeMeasureName EeMeasureDesc		 Is there a better way to report EE participation?



Known unknowns: a full list.

- Partial billing charges
 - Identifying when charges are incomplete.
 - Reporting CCA and DA participation.
- Unmetered consumption
 - Where to record in table schema.
 - How to record locational data.
- Rate schedules
 - How to fully identify a tariff, including key options and modifiers.
- Energy Efficiency
 - Can IOUs provide data to join with CEDARS?
 - Can POUs provide equivalent data?
 - Is this data sufficient?
- Submeters
 - Staff is unsure how to best handle submeters, where a meter is behind another physical or virtual meter.
 - Need to avoid accounting errors like double counting.
 - Need to keep track of meter relationships.



Source Data: Questions

BillingChargesElec	BillingConsumptionElec	IntervalConsumptionEle	c PremiseElec	
ServiceAccount10	Meteria	Meteria	Fremiseid	
PeriodStart TimeZoneStart PeriodEnd TimeZoneEnd BillCharge	ServiceAccountId PremiseId ServicePointId PeriodStart TimeZoneStart PeriodEnd TimeZoneEnd KwhNet IsKwhNetEstimated IsKwhNetUnmetered NaicsCode RateScheduleCode CommunityChoiceAggCode DirectAccessCode	ServiceAccountId PremiseId ServicePointId IntervalEndTime IntervalLength TimeZone KwhDelivered IsKwhDeliveredEstimate KwhReturned IsKwhReturnedEstimate	FullAddress StreetNumber HouseFractionNumber StreetPrefix StreetSuffix Building Unit City State Zip Zip4	
BillingChargesGas	BillingConsumptionGas		PremiseGas	
ServiceAccountId	MeterId		PremiseId	
PeriodStart	ServiceAccountId		FullAddress	
TimeZoneStart	PremiseId		StreetNumber	
PeriodEnd	ServicePointId		HouseFractionNumber	
RillAmount	TimeZoneStart		StreetName	
billemount	PeriodEnd		StreetSuffix	
	TimeZoneEnd		Building	
	Therms		Unit	
	Is ThermsEstimated		City	
	RateScheduleCode		Zin	
	DirectAccessCode		Zip4	
RateSchedule	CommunityChoiceAgg	DirectAccess	EnergyEfficiencyParticipation	
RateScheduleCode	CommunityChoiceAggCod	e DirectAccessCode	ServiceAccountId	
RateScheduleName	CcaName	DaProviderName	EeMeasureCode	
RateScheduleDesc	CcaDesc	DaProviderDesc	FebrogramCode	
			StartDate	
			EndDate	
			ClaimDate	
				1
		EnergyEfficiencyPrograms	EnergyEfficiencyMeasures	
		EeProgramCode	EeMeasureCode	21
		EeProgramName EeProgramDesc	EeMeasureName EeMeasureDosc	21
		ceriograniDesc	cerreasureDesc	



Rules defined in two categories

- 1. Quality Rules: describe how data should be validated, cleaned, or otherwise processed to ensure the resulting dataset is as clean and reliable as possible.
- 2. Formatting Rules: describe how data should be formatted and structured. This includes issues such as standardizing data types, conforming elements of a data field to a consistent format, and eliminating or combining source data fields.



Extract, Transform, and Load

- Data submitted to secure landing zone in Amazon Web Services.
 - ETL process performs basic data validations and checksums.
 - If validated, the process archives a copy for long-term backup and proceeds.
 - If not, the process rejects the data and raises a flag.
- Data files are combined and moved to a staging zone.
 - Process applies any interim formatting rules and all remaining data quality rules.
 - Prior to loading, data are transformed into a final relational table structure.
- Data are loaded into a storage hub in AWS, from which they can be queried directly or moved into other data stores.



The data dictionary describes basic transformation rules, and staff intends on developing more with the ETL contractor.

However, staff would like to leverage existing experience in utilities, academia, and private sector as much as possible to maximize transparency and quality.

Staff will combine public ETL recommendations with contractor recommendations in final draft.



Please return at

1:00 PM



Open Discussion

BillingChargesElec	BillingConsumptionElec	IntervalConsumptionEle	c PremiseElec	
ServiceAccountId	MeterId	MeterId	PremiseId	Known Unknowns
PeriodStart	ServiceAccountId	ServiceAccountId	FullAddress	
TimeZoneStart PeriodEnd TimeZoneEnd	PremiseId ServicePointId PeriodStart	remiseId PremiseId ervicePointId ServicePointId eriodStart IntervalEndTime imeZoneStart IntervalLength eriodEnd TimeZone imeZoneEnd KwhDelivered whNet IsKwhDeliveredEstimated	StreetNumber HouseFractionNumber StreetPrefix	Partial billing charges
BillCharge	TimeZoneStart PeriodEnd		StreetName	 Identifying when charges are incomplete.
0	TimeZoneEnd KwhNet		Building ed Unit	Reporting CCA and DA participation.
	IskwhNetEstimated IsKwhNetUnmetered	IsKwhReturnedEstimate	ed State	Unmetered consumption
	RateScheduleCode CommunityChoiceAggCode		Zip4	 Where to record in table schema.
	DirectAccessCode		 How to record locational data. 	
BillingChargesGas ServiceAccountId	BillingConsumptionGas MeterId		PremiseGas PremiseId	Rate schedules
PeriodStart	ServiceAccountId		FullAddress	 How to fully identify a tariff, including key
PeriodEnd	PremiseId ServicePointId		StreetNumber HouseFractionNumber	ontions and modifiers
TimeZoneEnd	PeriodStart	StreetPrefix	StreetPrefix	
BillAmount	TimeZoneStart PeriodEnd		StreetName StreetSuffix	Energy Efficiency
	TimeZoneEnd Therms		Building Unit	• Can IOUs provide data to join with CEDARS?
	IsThermsEstimated NaicsCode PateSchedulaCode		City State Zin	 Can POUs provide equivalent data?
	DirectAccessCode		Zip4	Is this data sufficient?
RateSchedule	CommunityChoiceAgg	DirectAccess	EnergyEfficiencyParticipation	Submeters
RateScheduleCode	CommunityChoiceAggCode	e DirectAccessCode	ServiceAccountId EeMeasureCode	• Staff is unsure how to best handle submeters.
RateScheduleDesc	CcaDesc	DaProviderDesc	PremiseId	where a meter is behind another physical or
			StartDate	where a meter is benind another physical of
			EndDate	virtual meter.
			ClaimDate	Need to avoid accounting errors like double
	[EnergyEfficiencyPrograms	EnergyEfficiencyMeasures	counting.
		EeProgramCode EeProgramName EeProgramDesc	EeMeasureCode EeMeasureName EeMeasureDesc	 Need to keep track of meter relationships.
	l		L	



Comments will begin with online participants

In the interest of time, oral comments may need to be limited to 3 minutes per person.

Staff will release prompts for written comments this week.



- Staff releases workshop slides and prompts for written comments this week.
- Written comments due 4:00 PM January 7, 2019.
- Staff releases request for contractor in early January 2019.
- Staff finalizes methods documents in January 2019.
- ETL work should begin February, 2019.
- Staff works with contractor and utilities to resolve any remaining issues, including topics out of scope for this workshop.

Thank You

Contacts

Jason Harville Assistant Executive Director for Energy Data and Analytics 916-654-3842 jason.harville@energy.ca.gov

Peng Gong Data Analytics Unit 916-654-4679 peng.gong@energy.ca.gov



Steven Mac Data Analytics Unit steven.mac@energy.ca.gov