



# Excess Behind the Meter Production

Cynthia Hinman  
Lead Client Trainer

July 21, 2020

The information contained in these materials is provided for general information only and does not constitute legal or regulatory advice. The ultimate responsibility for complying with the ISO FERC Tariff and other applicable laws, rules or regulations lies with you. In no event shall the ISO or its employees be liable to you or anyone else for any decision made or action taken in reliance on the information in these materials.

## Bob's House

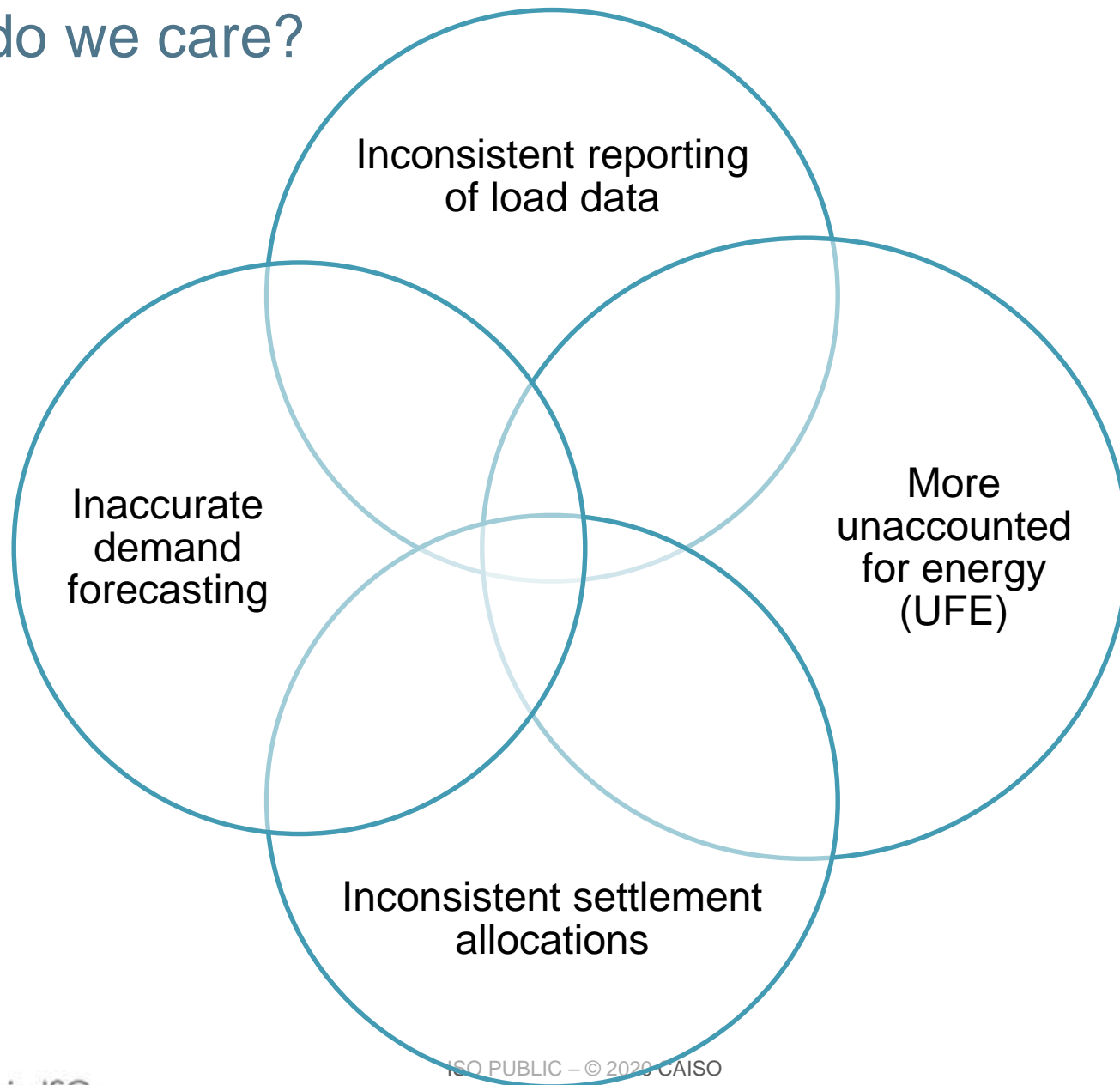


Producing 2 KWh of energy

Consuming 1 KWh of energy

When metered generation is greater than the host load, what is the correct way to submit that meter data to the ISO?

# Why do we care?



# Summary of Excess Behind the Meter Production provisions effective 1/1/21

- Update Tariff and BPM definitions
- Specify rules for submitting meter data
- Clarify settlement allocation formulas

# DEFINITIONS

## Gross Load definition clarification

“...includes Load served by Excess Behind the Meter Production. Excess Behind the Meter Production shall not be netted against End-Use Customer Load in determining Gross Load....”



Producing 2 KWh of energy

Consuming 1 KWh of energy

**Gross Load = 0 KWh**

## New Excess Behind the Meter Production definition

“Energy from an End-Use Customer in excess of its onsite demand.”



Producing 2 KWh of energy

Consuming 1 KWh of energy

Excess Behind the Meter  
Production (EBTMP) = 1  
KWh

# METERING REQUIREMENTS



# Meter data energy measurement types after 1/1/21

Meter Polling Time Interval	Behind the Meter		At the Meter		Hourly Meter Value	
	Full Load (KWh)	Solar (KWh)	Gross Load (KWh)	EBtMP (KWh)	Gross Load (KWh)	EBtMP (KWh)
			If (2) > (3) then (2) - (3), else 0	If (3) > (2) then (3) - (2), else 0	If sum of (4) > (5) then = sum of (4) - (5), else 0	If sum of (5) > (4) then = sum of (5) - (4), else 0
(1)	(2)	(3)	(4)	(5)	(6)	(7)
12:05	5	2	3	0	<b>22</b>	<b>0</b>
12:10	5	2	3	0		
12:15	5	2	3	0		
12:20	5	2	3	0		
12:25	5	2	3	0		
12:30	5	6	0	1		
12:35	5	6	0	1		
12:40	5	6	0	1		
12:45	5	4	1	0		
12:50	5	2	3	0		
12:55	5	2	3	0		
13:00	5	2	3	0		



Note: This is an aggregation for a single household up to the hourly level

# Example – A Load Aggregation Point (LAP) with three homes (for one hour)



## Home 1

22 KWh of Gross Load  
0 KWh of EBTMP



## Home 2

15 KWh of Gross Load  
0 KWh of EBTMP



## Home 3

0 KWh of Gross Load  
10 KWh of EBTMP

## LAP Totals

Gross Load = 35 KWh  
EBTMP = 10 KWh

# Gross Load (with Gross Up) calculation for settlements

Hourly Meter Value (KWh)					MRI-S (KWh)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
<b>Gross Load</b>	<b>EBTMP</b>	DLF	Losses from Gross Load $(1) * (3)$	Avoided losses from EBTMP $(2) * (3)$	<b>Gross Load (with Gross Up)</b> $(1) + (4) - (5)$	<b>EBTMP</b>
35	10	.10	3.5	.1	38.4	10

More examples in FAQ

# Scheduling coordinator impact

**Applies to**

- Scheduling Coordinator Metered Entities (SCME)

**Does not apply to**

- ISO Metered Entities (ISOME)
- EIM SCs
- Certain publicly owned utilities
- Metered Subsystems (MSS)

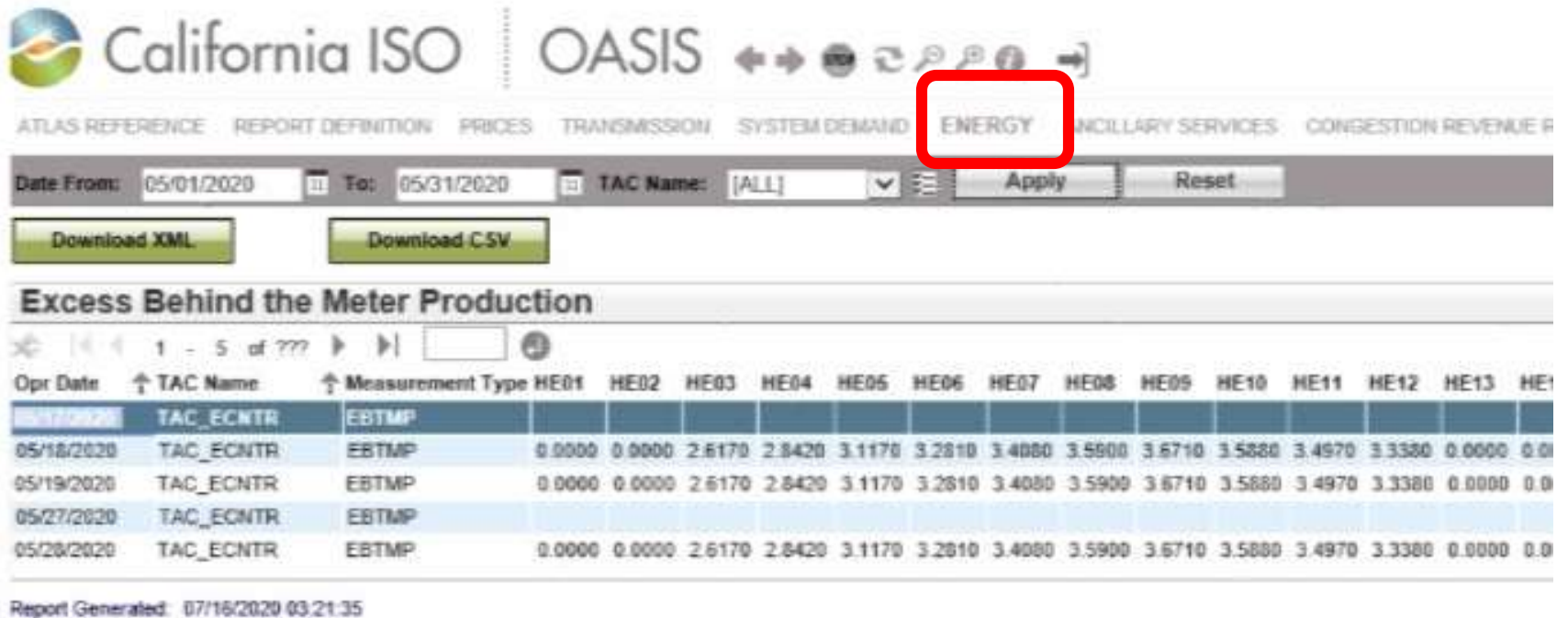
## Meter submission details

- Meter data submission mechanism will not change
- SC must perform Gross Up calculation
- Values must not be null or negative
- SubmitMeterData payload containing Load and EBTMP as of 1/1/21

	<> measurementType	<> timeIntervalLength	<> unitMultiplier	<> unitSymbol	<> MeasurementValue	<> RegisteredGenerator	<> RegisteredLoad
1	LOAD	60	M	Wh	MeasurementValue		RegisteredLoad mRID ELAP_SCL_LOAD
2	EBTMP	60	M	Wh	MeasurementValue		RegisteredLoad mRID ELAP_SCL_LOAD
3	CFM	5	M	MWh	MeasurementValue	RegisteredGenerator	

# REPORTING - OASIS

# A new OASIS Report will be found in the Energy menu



The screenshot shows the California ISO OASIS web application interface. At the top, the California ISO logo is on the left, followed by the text 'California ISO' and 'OASIS'. To the right of 'OASIS' are several navigation icons. Below this is a horizontal menu with the following items: 'ATLAS REFERENCE', 'REPORT DEFINITION', 'PRICES', 'TRANSMISSION', 'SYSTEM DEMAND', 'ENERGY', 'ANCILLARY SERVICES', and 'CONGESTION REVENUE'. The 'ENERGY' menu item is highlighted with a red rectangular box. Below the menu is a search and filter bar with the following fields: 'Date From: 05/01/2020', 'To: 05/31/2020', 'TAC Name: [ALL]', and buttons for 'Apply' and 'Reset'. Below the search bar are two buttons: 'Download XML' and 'Download CSV'. The main content area is titled 'Excess Behind the Meter Production'. Below the title is a table with the following columns: 'Opr Date', 'TAC Name', 'Measurement Type', and 14 columns labeled 'HE01' through 'HE14'. The table contains four rows of data for dates 05/18/2020, 05/19/2020, 05/27/2020, and 05/28/2020. The first row is highlighted in blue. Below the table is the text 'Report Generated: 07/16/2020 03:21:35'.

California ISO OASIS

ATLAS REFERENCE REPORT DEFINITION PRICES TRANSMISSION SYSTEM DEMAND **ENERGY** ANCILLARY SERVICES CONGESTION REVENUE

Date From: 05/01/2020 To: 05/31/2020 TAC Name: [ALL] Apply Reset

Download XML Download CSV

### Excess Behind the Meter Production

1 - 5 of ???

Opr Date	TAC Name	Measurement Type	HE01	HE02	HE03	HE04	HE05	HE06	HE07	HE08	HE09	HE10	HE11	HE12	HE13	HE14
05/18/2020	TAC_ECINTR	EBTMP														
05/18/2020	TAC_ECINTR	EBTMP	0.0000	0.0000	2.6170	2.8420	3.1170	3.2810	3.4080	3.5900	3.6710	3.5880	3.4970	3.3380	0.0000	0.0000
05/19/2020	TAC_ECINTR	EBTMP	0.0000	0.0000	2.6170	2.8420	3.1170	3.2810	3.4080	3.5900	3.6710	3.5880	3.4970	3.3380	0.0000	0.0000
05/27/2020	TAC_ECINTR	EBTMP														
05/28/2020	TAC_ECINTR	EBTMP	0.0000	0.0000	2.6170	2.8420	3.1170	3.2810	3.4080	3.5900	3.6710	3.5880	3.4970	3.3380	0.0000	0.0000

Report Generated: 07/16/2020 03:21:35

# SETTLEMENT IMPLICATIONS



## Settlement charge codes that are using the new “Gross Load” definition

Charge code #	Charge Code Description
372	High Voltage Access Charge Allocation
382	High Voltage Wheeling Allocation
383	Low Voltage Wheeling Allocation
1302	Long Term Voltage Support Allocation
1303	Supplemental Reactive Energy Allocation
6090	Ancillary Service Upward Neutrality Allocation
6194	Spinning Reserve Obligation Settlement
6196	Spinning Reserve Neutrality Allocation
6294	Non-Spinning Reserve Obligation Settlement
6296	Non-Spinning Reserve Neutrality Allocation
6594	Regulation Up Obligation Settlement
6596	Regulation Up Neutrality Allocation
6694	Regulation Down Obligation Settlement
6696	Regulation Down Neutrality Allocation
7256	Regulation Up Mileage Allocation
7266	Regulation Down Mileage Allocation
7896	Monthly CPM Allocation

## Settlements – Updated formulas

- CG PC Real Time Energy Quantity v5.22
  - Net Load = Gross Load Meter – Excess Behind the Meter Production
- CG CC 6474 Real-Time Unaccounted for Energy Settlement v5.6
  - Unaccounted for Energy Quantity = (Generation Meter + Import Intertie Meter) – (Net Load + Export Intertie Meter + Losses)

# NEXT STEPS

# EBTMP Milestones

<b>Date</b>	<b>Milestone</b>
July 27 – September 16, 2020	Market Simulation July 27 – Connectivity begins August 24 – Structured testing begins
October 1, 2020	Deployment
January 1, 2021	Production Activation/ Effective Trade Date

# Market Sim Scenario #1

Scenario Execution Trade Date(s): TBD	
Scenario #1	Publish Initial Statement and Invoice.
Description	<p>Scheduling Coordinators submit LOAD meter data for Load Resources to produce settlement results.</p> <p>Scheduling Coordinators retrieve bill determinants, submitted LOAD meter data for performed Initial Settlement Statement.</p>
Expected System Outcome	Scheduling Coordinator Meter Entity (SCME) meter data submission from SCME systems to be successfully received, validated, and processed by ISO settlement system.
Anticipated Settlement Outcome	Charge Code 6474 Real-Time Unaccounted for Energy Settlement

# Market Sim Scenario #2

Scenario Execution Trade Date(s): TBD	
Scenario #2	Publish ReCalc Statement and Invoice.
Description	<p>Scheduling Coordinators submit EBTMP meter data for the same Load Resources as in Scenario 1 to produce settlement results.</p> <p>Scheduling Coordinators retrieve bill determinants, submitted LOAD and EBTMP meter data for performed Re-Calc Settlement Statement.</p>
Expected System Outcome	Re-Calc Settlement Statement will confirm new UFE/Net Load Meter definition per the EBTMP initiative and tariff revision.
Anticipated Settlement Outcome	Charge Code 6474 Real-Time Unaccounted for Energy Settlement

# Market Sim Scenario #3

Scenario Execution Trade Date(s): TBD	
Scenario #3	ISO publishes its EBTMP Performance Report by TAC Area.
Description	ISO publishes its EBTMP Performance Report by TAC Area.
Expected System Outcome	<p>OASIS shall display new “Excess Behind the Meter Production” Report for all 24 hours of a specified trade date on a simulated T+52B timeline (e.g. under an abbreviated market sim calendar).</p> <p>Data presented by TAC Area for each trade hour, and is available for public access and retrieval.</p>
Anticipated Settlement Outcome	Non-Applicable

# Market Sim Scenario #4

Scenario Execution Trade Date(s): TBD	
Scenario #4	ISO will calculate monthly TAC charges based on previously submitted daily Gross Load values.
Description	ISO will calculate monthly TAC charges based on previously submitted daily Gross Load values.
Expected System Outcome	Calculate TAC charges for each UDC based upon the Gross Load within that UDC and paid to the relevant PTO.
Anticipated Settlement Outcome	Charge Code 372 High Voltage Access Charge Allocation



# Wrap Up



# BPMs impacted

## 4.5 Business Practice Manual (BPM)

BPM	Description of Impact(s)
<b>Definitions &amp; Acronyms</b>	Update definition of Gross Load Add <i>Excess Behind the Meter Production</i> <i>POC: G.Murtaugh, J.Lynn</i>
<b>Metering</b>	Yes. New EBtMP meter measurement type; SC submission of both Gross Load and EBtMP meter data <i>POC: G.Murtaugh, J.Lynn</i>
<b>Market Instruments</b>	Yes. New OASIS EBtMP Performance Report/API <i>POC: E.Cullado</i>
<b>Market Operations</b>	Yes. EBtMP Training of Load Forecast Model <i>POC: A.Motley, A.Javanbakht</i>
<b>Settlements &amp; Billing</b> <i>Configuration Guides only</i>	Yes. Modified UFE calculation; settle gross load as measured demand for EBtMP resources <i>POC: J.Lynn</i>

## Summary of changes

- **Market Simulation** - New meter measurement type; New OASIS Report; Settlement of load-based charges for ISO BAA entities.
- **Market Participant Impact** – SCs will be required to input both Gross Load and Excess Behind the Meter Production, as separate measurement types (non-netted), under the same resource ID with respect to new tariff alterations.

## Resources – Stakeholder Process Page

- Draft Final Proposal and presentation
- Board of Governors Decision
- Draft Tariff Language

Home>Stay Informed>Stakeholder Processes>Excess behind the meter production

<http://www.caiso.com/StakeholderProcesses/Excess-behind-the-meter-production>

# Resources - Release Planning Page

- Business Requirements (BRS)
- Frequently Asked Questions (FAQ)
- FAQ Gross Load Calculation Example

Home>Stay Informed>Release Planning>Excess behind the meter production implementation

<http://www.caiso.com/informed/Pages/ReleasePlanning/Default.aspx>

# Final Questions



For more detailed information on anything presented, please  
visit our website at:

[www.caiso.com](http://www.caiso.com)

Or send an email to:  
CustomerReadiness@caiso.com