California ISO

# Business Requirements Specification

## Logical Meter Calculation Transparency Enhancement

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|  | **Technology** | **Template Version:** | **4.3** |
|---|---|---|---|
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| **Logical Meter Calculation Transparency Enhancement Business Requirements Specification - Planning** | | **Date Created:** | **11/19/2018** |

Revision History

| Date | Version | Description |
|---|---|---|
| 11/15/2018 | 1.0 | Initial document release. |

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# 1 Introduction

## 1.1 Purpose

The ISO Logical Meter Calculation (LMC) methodology provides settlement quality meter data for energy deemed delivered for dynamic ISO system resources (non ISO-polled).  This business requirement specification describes enhancements made that will deliver greater transparency regarding the LMC calculation by posting allocation factor bill determinants for settlement dates on or January 1, 2019.

It should be noted that ISO Settlements shall use total expected energy value to estimate LMC values for the T+3 Initial Statement only.  No allocation factors will be determined or provided as bill determinants for this statement.

# 2 Intellectual Property Ownership

Intellectual property covers a broad array of information and materials, including written works, computer programs, software, business manuals, processes, symbols, logos, and other work products. Determining ownership of intellectual property is very important in preserving rights of the California ISO and helps to avoid intellectual property infringement issues. In considering the business requirements or service requirements to be performed, the business owner of the project must determine intellectual property Ownership.

## 2.1 Checklist

*Specifically, CAISO retains intellectual property ownership of the following:*
- Logical Meter Calculator design, methodology
- Related Business Practice Manuals
- All rights reserved for contents included within this BRS document

# 3 Acronym Definitions

| Acronym | Definition |
| --- | --- |
| AS | Ancillary Services |
| ATF | After-the-Fact |
| BD | Bill Determinant |
| LMC | Logical Meter Calculator, or Logical Meter Calculation |
| NGR | Non-Generating Resource |
| PI | Plant Information |
| TG | Tie Generator |
| TNGR | Tie Non-Generating Resource |
| VER | Variable Energy Resource |

# 4 Details of Business Need/Problem

## 4.1 Description

The Logical Meter Calculator (LMC) was enhanced to provide a basis of shadow settlement for ISO market participants that receive the logical meter calculation bill determinant.

# 5 Business Impacts

## 5.1 Business Practice Manual (BPM)

| BPM | Description of Impact(s) |
| --- | --- |
| **Settlements & Billing** | Yes (see PRR1102 draft Settlements and Billing Configuration Guide for new LMC Bill Determinant) |
| **BPM Change Management** | N/A |
| **Candidate CRR Holder** | N/A |

| BPM | Description of Impact(s) |
|---|---|
| Compliance Monitoring | N/A |
| Congestion Revenue Rights | N/A |
| Credit Management | N/A |
| Definitions & Acronyms | N/A |
| Direct Telemetry | N/A |
| Distributed Generation for Deliverability | N/A |
| Generator Interconnection and Deliverability Allocation Procedures | N/A |
| Generator Interconnection Procedure  (GIP) | N/A |
| Generator Management | N/A |
| Managing Full Network Model | N/A |
| Metering | N/A |
| Outage Management | N/A |
| Reliability Requirement | N/A |
| Rules of Conduct Administration | N/A |
| Scheduling Coordinator Certification & Termination | N/A |
| Transmission Planning Process | N/A |

## 5.2  Other

| Impact: | Description: (optional) |
|---|---|
| Market Simulation | No |
| Market Participant Impact | Yes |
| User Acceptance Testing (UAT) | Yes |
| External Training | No |
| Policy Initiative | No |

# 6 Business Requirements

The sections below describe the Business Processes and the associated Business Requirements involved in the project. These may represent high level functional, non-functional, reporting, and/or infrastructure requirements. These business requirements directly relate to the high-level scope items determined for the project.

## 6.1 Business Process: Manage Market Billing & Settlements

### 6.1.1 Business Requirements

| ID# | Business Feature | Req Type | Potential Application(s) Impacted |
|---|---|---|---|
| LMCTE-BRQ0010 | On a daily basis, system shall identify all active Tie Generator (TG) resources by resource type for trade date.<br><br>Tie Generator resource types shall include (with definition):<br><br>• **Regular TG:** Dynamic TG (non pseudo-tie, non iso-polled metering)<br><br>• **AS Tie Gen:** TG includes Non Resource-Specific System Resources that are certified as VER and can provide AS (firm energy, HASP participating resource, non pseudo-tie, non ISO-polled metering)<br><br>• **Pseudo Tie:** Dynamic TG (designated as a pseudo tie gen resources)<br><br>• **TNGR:** Dynamic Tie NGR resource (Non-EIM resources) | Existing Functionality | Settlements, MasterFile |
| LMCTE-BRQ0020 | System shall provide LMC with allocation factor billing determinants for settlement dates on or after the Go Live ("post-cutover").<br><br>System shall still provide LMC values for settlement dates prior to Go Live ("pre-cutover"), but without the new allocation factor billing determinant. | Core | Settlements |

| ID# | Business Feature | Req Type | Potential Application(s) Impacted |
|---|---|---|---|
| LMCTE-BRQ0030 | System shall retrieve and store latest **final tagged quantity** values (both ITIE and ETIE) from the interchange scheduling system for all tie gen resources. <br><br> Tagged quantities for TNGR resource types will determine their energy schedule as the sum of the associated import and export energy profile tag quantities (unlike the transmission profiles, which shall remain separate). <br><br> See TNGR LMC requirements in the EIM Enhancements Winter 2017 BRS: <br> • EIMWNT17_BRQ471 <br> • EIMWNT17_BRQ472 | Existing Functionality | Settlements |
| LMCTE-BRQ0040 | On a daily basis, ISO internal system retrieves and store for each 5-minute settlement interval of a given trade hour the following information from PI librarian system for use in LMC allocation factor calculation: <br><br> • **5-minute telemetry** output value (MWh) <br><br> System shall validate/clean incoming interval telemetry data with the following business rules: <br><br> • data shall only be retrieved for those Tie Gen resources defined as "Regular Tie Gen" resource type** <br><br> • data values that are received as zero shall be automatically converted and stored as 0.00001 | Core | Settlements |

| ID# | Business Feature | Req Type | Potential Application(s) Impacted |
|---|---|---|---|
| LMCTE-BRQ0050 | On a daily basis, system shall perform logical meter calculation for all ongoing settlement cycles using the following retrieved data: <br><br> • Trade Date <br> • Trade Hour <br> • 5-minute Settlement Interval (1-12) <br> • Resource id <br> • PI 5-minute telemetry value <br> • Final Tagged Quantity <br><br> System shall calculate logical meter values with the following business logic: <br><br> • values will only be calculated for trade dates *on or after Go Live* <br> • values will only be calculated for Tie Gen resources defined as a "Regular Tie Gen" (ITIES/ETIES, dynamics) resource type <br> • values will not be performed for EIM Dynamic System Resources (SRs) <br> • final tagged quantity to TG resources will be included in the ATF payload and map to the appropriate existing bill determinant <br> • values will only be calculated for intervals within trade hours with a non-NULL Final Tagged Quantity value received. | Existing Functionality | Settlements |

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| ID# | Business Feature | Req Type | Potential Application(s) Impacted |
|---|---|---|---|
| LMCTE-BRQ0060 | For each 5-minute settlement interval of a given trade hour, system shall calculate an **LMC Allocation Factor** as the interval's **5-minute telemetry** value divided by the sum of telemetry values for all twelve intervals of the trade hour.<br><br>Wherein the following business logic is observed:<br><br>• LMC Allocation Factor values will only be provided for trade dates on or after the configurable cutover date*<br>• values will only be calculated for Tie Gen resources defined as a "Regular Tie Gen" resource type**<br>• values will not be performed for EIM Dynamic System Resources<br>• final tagged quantity to TG resources will be included in the ATF payload and map to the appropriate existing bill determinant<br>• values will only be calculated for intervals within trade hours where a non-NULL Final Tagged Quantity value is received for resource | Existing Functionality | Settlements |
| LMCTE-BRQ0070 | For each 5-minute settlement interval of a given trade hour, system shall compute **Logical Meter Value** as the interval's **LMC Allocation Factor** multiplied by the trade hour's **Final Tagged Quantity**.<br><br>Wherein the following business logic is observed:<br><br>• values will only be calculated for Tie Gen resources defined as a "Regular Tie Gen" resource type**<br>• values will not be performed for EIM Dynamic System Resources<br>• values will only be calculated for intervals within trade hours where a non-NULL Final Tagged Quantity value is received for resource | Existing Functionality | Settlements |

| ID# | Business Feature | Req Type | Potential Application(s) Impacted |
|---|---|---|---|
| LMCTE-BRQ0080 | On a daily basis, where needed, system shall provide bill determinants for settlement dates to all ongoing settlement cycles, wherein: <br><br> • the following 5-minute settlement interval bill determinants shall continue to be provided for settlement dates prior to Go Live (i.e. pre-cutover settlement dates) <br><br>      1) Final Tagged Quantity <br>      2) Logical Meter value <br><br> • the following 5-minute settlement interval bill determinants shall be provided for settlement dates on or after Go Live (i.e. post-cutover settlement dates) <br><br>      1) Final Tagged Quantity <br>      2) Logical Meter value <br>      3) *LMC allocation factor* <br><br> System shall map new bill determinants, as appropriate. <br><br> Final tagged quantity to TG resources will be included in the ATF payload and map to the appropriate existing bill determinant <br><br> System shall only provide logical meter bill determinant values for the "Regular Tie Gen" resource type that is not 1) an EIM dynamic system resource or 2) Pseudo Tie Gen resource types. | Core | Settlements |
| LMCTE-BRQ0090 | System shall pass-through Final Tagged Quantity values for "AS Tie Gen" and "TNGR Tie Gen" resource types for downstream settlement systems. <br><br> For each 5-minute settlement interval, the Settlement system shall receive logical meter values for TNGRs on a positive import convention, such that: <br><br> • LMC positive values as import <br> • LMC negative values as negative import (i.e. export) <br><br> TNGR resource LMC values may be either positive or negative direction within the same trade hour. | Core | Settlements |