Business Requirements Specification

Real Time Market Neutrality Settlement

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	Technology	Template Version:	4.8
		Document Version:	1.2
Real Time Market Neutrality Settlement **Business Requirements Specification - Planning**		Date Created:	7/3/2019

Revision History

Date	Version	Description
7/3/2019	1.0	Initial Document Release
8/6/2019	1.1	Update RTMNeuS-BRQ120,Shape ETSR ATF tag to reflect RTD ETSR dispatch
9/27/2019	1.2	Clarify RTMNeuS-BRQ120, shape ETSR ATF tag for CAISO check out, use EIM submitted tag as is.

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1 Introduction

1.1 Purpose

The purpose of this document is to capture and record a description of what the Users and Business Stakeholders of the project wish to obtain, by providing high level business requirements. This document establishes the basis for the agreement between the initiators and implementers of the project. The information in this document serves as input to determine the scope of projects and all Business Process Modeling and System Requirements Specifications efforts.

The Real Time Market Neutrality Settlement policy scope includes:

- No longer perform real-time imbalance energy offset (RTIEO) transfer adjustment
- EIM transfer financial value uses…
    - System marginal energy cost (SMEC) with California BAAs
    - SMEC + GHG (<= $0.00) between non-California EIM BAAs
- BPM change to standardize how EIM entity updates EIM transfer system resource (ETSR) with 5 minute transfer value

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 the 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

CAISO retains intellectual property ownership of the following:

- Design of RTM Neutrality Settlement
- Related Business Practice Manuals
- Software codes to implement the design changes
- All rights reserved for works included within this BRS document

3 Details of Business Need/Problem

3.1 Description

The ISO reviewed the current formula and decided the formula need change to align with the principle that any neutrality offset caused by the BAA should remain in that BAA.

Modify the Real Time Market Neutrality Settlement formula:

$$EIM\ RTIEO = IIE+UIE+UFE+Congestion+Loss+GHG+TransferFinancialValue+TransferAdjustment$$

Credit back GHG cost for non-CA EIM transfer → TransferFinancialValue

Remove → TransferAdjustment

3.2 Definitions

EIM transfers GHG credit MWh: the portion of the EIM Transfers that do not correspond to a greenhouse gas compliance obligation under the regulations administered by the California Air Resources Board

Marginal Greenhouse Gas Cost: The LMP component representing the shadow price of the Net Imbalance Energy Export constraint.

4 Business Impacts

4.1 Business Practice Manual (BPM)

BPM	Description of Impact(s)
Settlements & Billing	Yes, update BPM - CG CC 6477 Real Time Imbalance Energy Offset BPM - CG CC 64770 Real Time Imbalance Energy Offset EIM

4.2 Other

Impact:	Description: (optional)
Market Simulation	Yes

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Impact:	Description: (optional)
Market Participant Impact	Yes
External Training	Yes
Policy Initiative	Yes

5 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.

5.1 Business Process: <Manage Settlement and Billing>

Modify CC6477 and CC64770:

- Eliminate EIM transfer adjustment from RTIEO,

- Add GHG Financial credit for the portion of EIM transfers that do not correspond to a GHG compliance obligation

- Use 5-minute ATF tag of EIM transfers in settlement

5.1.1 Business Requirements

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
RTMNeuS-BRQ010	**Remove EIM adjustment:** - For CAISO, the *Real Time Imbalance Energy Offset* shall remove the CAISO Transfer Adjustment Amount from CAISO Total RTIEO settlement Amount - For EIM BAAs, the *EIM Real Time Imbalance Energy Offset* shall remove the Transfer Adjustment Amount, include BAA Transfer In Adjustment Amount, and EIM BAA Transfer Out Adjustment Amount, from EIM BAA Total RTIEO Settlement Amount for each EIM BAA	Core Tariff 11.5.4.1 (c) being removed	Settlements

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
RTMNeuS-BRQ030	**Calculate EIM Transfer RTM financial value at SMEC** For each BAA in EIM footprint *the Real Time Imbalance Energy Offset* shall calculate the EIM transfer RTM financial value at SMEC for FMM and RTD as • the product of EIM transfer quantity and System Marginal Energy Cost (SMEC)	Existing Tariff 11.5.4.1 (a)	Settlements
RTMNeuS-BRQ040	**CAISO Financial Value Transfer:** The *Real Time Imbalance Energy Offset* shall calculate CAISO Total Financial Value Transfer as the product of EIM transfer quantity and System Marginal Energy Cost (SMEC) for FMM and RTD. Note: Since all CAISO EIM transfers have GHG compliance obligation, the GHG financial credit is zero.	Existing	Settlements
RTMNeuS-BRQ050	**Calculate EIM transfer GHG credit MWh quantity:** The *EIM Real Time Imbalance Energy Offset* shall calculate the total EIM transfers GHG credit MWh for each EIM BAA for FMM and RTD • Import (-) plus Export(+) less GHG obligation(+) • The above is equivalent to net EIM transfer less GHG obligation Examples of non-GHG EIM transfer MWh: • Exporting 100MWh, GHG Award 25MWH = +75MWh • Importing 50MWh, GHG Award 25MWh = -75MWh • No EIM transfer, GHG Award 25MWh = -25MWh	Core	Settlements

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ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
RTMNeuS-BRQ070	**Input GHG cost** The *EIM Real Time Imbalance Energy Offset* shall have inputs of marginal greenhouse gas cost for FMM and RTD Note: Tariff clarify the fourth component in the LMP as Marginal Greenhouse gas cost, not use EIM bid adder refer to LMP fourth component.	Core Tariff 29.32 (c) Appendix A, Appendix C	Settlements
RTMNeuS-BRQ080	**Calculate GHG financial value credit:** The *EIM Real Time Imbalance Energy Offset* shall calculate GHG financial value credit as the product of EIM transfer GHG credit MWh and GHG marginal cost for FMM and RTD, for each EIM BAA Note: • EIM transfer GHG credit MWh can be positive or negative (RTMNeuS-BRQ050) • GHG marginal cost is the fourth component in the (LMPs) of EIM Entity BAAs (-). • FMM EIM transfer GHG credit MWh is the Incremental/decremental to ETSR Base Schedules • RTD EIM transfer GHG credit MWh is the Incremental/decremental to ETSR FMM Schedules • Base ETSRs that is elected to settle at LMP will not be included in GHG financial credit	Core Tariff 11.5.4.1 (a)	Settlements
RTMNeuS-BRQ085	**CA BAAs have zero GHG financial credit** GHG financial value credit shall be zero for EIM BAAs that are in California	Core	Settlements

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
RTMNeuS-BRQ090	**Calculate financial value of EIM transfer:** For each EIM BAA the *EIM Real Time Imbalance Energy Offset* shall calculate the EIM transfer total financial value as EIM transfer financial value at SMEC **plus** GHG financial value credit for FMM and RTD Note: • *EIM transfer financial value at SMEC:* (SMEC) (RTMNeuS-BRQ030) • *GHG financial value credit:* (RTMNeuS-BRQ080)	Core Tariff 11.5.4.1 (a)	Settlements
RTMNeuS-BRQ095	**Sum of FMM and RTD EIM transfer financial value** For each EIM BAA the *EIM Real Time Imbalance Energy Offset* shall calculate the total EIM transfer financial value as sum of FMM and RTD EIM transfer financial value.	Existing	Settlements
RTMNeuS-BRQ100	**Output EIM transfer value and GHG financial credit** The *EIM Real Time Imbalance Energy Offset* shall output for each BAA for FMM and RTD: • the EIM transfer GHG credit MWh • the GHG financial value credit • EIM transfer financial value at SMEC • Total Financial value of EIM transfer as EIM transfer financial value at SMEC **plus** GHG financial value credit	Core	Settlements
RTMNeuS-BRQ115	Tagging responsible EIM entity shall submit the ATF checked out tags for ETSR	Existing	RTSI

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
RTMNeuS-BRQ120	**Use ATF EIM Deemed Delivered MWs for ETSR** ~~Shape the submitted ETSR ATF tag to reflect RTD ETSR dispatches in 5 minute interval:~~ • Settlement shall use CAISO check out hourly integrated tag for ETSR between CAISO and EIM BAA • System shall shape the CAISO check out hourly ETSR ATF values to reflect RTD ETSR dispatches in 5 minute interval • Settlement shall use EIM submitted ATF check out integrated tag for ETSR between EIM BAAs as is. • ~~System shall shape the submitted ETSR ATF values to reflect RTD ETSR dispatches in 5 minute interval~~ Note: per EIM entity request, CAISO will provide specifications for EIM to shape their ATF values.	Core	Settlement

5.2 Business Process: <Manage Market Results Interface (CMRI) >

5.2.1 Business Requirements

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
RTMNeuS-BRQ200	**Both entities can see ETSR ATF tag** *System shall* allow both EIM entities of ETSR, that transfer energy through ETSR in EIM market, access the ETSR ATF tag values that submitted by the EIM entity with tagging responsibility Note: • System can map the Tag value to the mirror resource for the counterpart ETSR SC.	core	CMRI

5.3 Business Process: <Market/Business Simulation>

This section shall provide a basis for the development of the Market/Business Simulation Scenarios. Business Requirements

ID#	Guidance on Market Participant Impacts	Source System	Sink System	Reason for Potential Scenario
RTMNeuS-BRQ300	Each BAA receive following output data for FMM and RTD for Settlement Rule changes for RTIEO CC64770: • the EIM transfer GHG credit MWh • the GHG financial value credit • EIM transfer financial value at SMEC • Total Financial value of EIM transfer as EIM transfer financial value at SMEC **plus** GHG financial value credit	Settlement	EIM Entity	Rule Impacts New/Modified model data
RTMNeuS-BRQ301	Calculate RTIEO: • Remove EIM transfer adjustments • Include EIM transfer GHG credit in *Total Financial value of EIM transfer*	Settlement	EIM Entity shadow settlement	Rule Impacts
RTMNeuS-BRQ302	Use ATF EIM Deemed Delivered MWs for ETSR: Responsible EIM submit ATF tag for ETSR, shape by the RTD ETSR.	EIM Entity submit ATF ETSR tag to RTSI	Settlement	New/Modified model data
RTMNeuS-BRQ303	Both EIM entities of ETSR access the ETSR ATF tag values that submitted by the EIM entity with tagging responsibility	CMRI	EIM entities	New/Modified model data