FERC Order No. 841 – Requested Adjustments Project

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Manager, Customer Readiness

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In November 2019, FERC responded to CAISO’s compliance filing for FERC Order 841. FERC generally accepted the filing, but took exception to certain proposed provisions.

In response to FERC’s directives, the CAISO responded with a further compliance filing to address three (3) issues as noted below.

1. Reflecting storage resources’ physical and operational characteristics in the CAISO tariff
2. Lowering the minimum capacity requirements for storage resources to provide ancillary services from 500kW to 100 kW
3. Ensuring that the CAISO’s metering practices allow for storage resources to participate in the retail and wholesale markets
FERC 841 Background, cont.

• As a result of the further compliance filing, this new FERC 841 – Requested Adjustments Project was initiated.

• System changes and process for removing charges to be effective on **October, 1 2020.**

Note that the scope of this Project is separate and apart from the scope and implementation of the previous FERC 841 – NGR Model Project which was implemented in 2019.
DEFINITIONS
## Definitions

<table>
<thead>
<tr>
<th>Abbreviation/Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>A/S</td>
<td>Ancillary Services</td>
</tr>
<tr>
<td>BPM</td>
<td>Business Practice Manual</td>
</tr>
<tr>
<td>BRQ</td>
<td>Business Requirements</td>
</tr>
<tr>
<td>CAISOME</td>
<td>CAISO Meter Entities</td>
</tr>
<tr>
<td>GRDT</td>
<td>Generator Resources Data Template</td>
</tr>
<tr>
<td>KWh</td>
<td>Kilowatt hour</td>
</tr>
<tr>
<td>M&amp;CI</td>
<td>Model and Contract Implementation Department</td>
</tr>
<tr>
<td>MWh</td>
<td>Megawatt hour</td>
</tr>
<tr>
<td>NGR</td>
<td>Non-Generating Resource</td>
</tr>
<tr>
<td>SCME</td>
<td>Scheduling Coordinator Meter Entity</td>
</tr>
<tr>
<td>UDC</td>
<td>Utility Distribution Company</td>
</tr>
</tbody>
</table>
REQUESTED ADJUSTMENTS
OVERVIEW
FERC 841 Adjustment #1

- CAISO has included at the Tariff level operational and technical constraints for storage resources which are currently identified in the Master File and Market Instruments BPM.

- Master File Parameters
  - Tariff Section 4.6.11
  - Tariff Section 27.9:
    - Identifies applicable parameters for NGRs and Pump-Storage Hydro Units
    - Based on stakeholder discussions, Legal removed one set of parameters to proposed Tariff change
    - All parameters noted in Tariff changes already exist in Master File
FERC 841 Adjustment #2

- CAISO has lowered its minimum capacity requirements for ancillary services from 500 kW to 100 kW for storage resources. (Tariff - Appendix K revised)

- Adding 100kW minimum for A/S
  - Tariff Appendix K (A1.1.1, B1.1, C1.1)
    - Regulation
    - Spin
    - Non-Spin
FERC 841 Adjustment #3

- Update at the Tariff level CAISO’s current metering and accounting practices as specified in the Metering BPM to allow for simultaneous participation in both retail and wholesale markets.

- Metering Practices
  - New Tariff Section 10.1.3.4
    - (a) CAISOME – Tariff provisions already covered in BPM
    - (b) SCME – Tariff provisions already covered in BPM
FERC 841 Adjustment #4

• FERC directs the CAISO to create or modify a participation model that will exempt a storage resource from wholesale charges where it already pays retail charges.

• M&CI and Settlement Requirements
  – New Tariff Section 10.1.3.4
  “Effective [October 1, 2020], for any Non-Generator Resource where the Utility Distribution Company or retail utility verifies in writing to the CAISO that it is unable or unwilling to net out from its retail billing any energy purchases associated with the Non-Generator Resource’s charging pursuant to CAISO settlement, the CAISO will not settle the Non-Generator Resource’s negative Energy for charging.”
• To avoid duplicative billing where a UDC or retail utility is unable or unwilling to separate wholesale and retail charges, the CAISO will exempt a storage resource from wholesale charges for negative energy used for charging.
  – Administrative changes to allow an NGR to be classified in the Master File as being exempt from CAISO charges for negative energy (charging)
  – System changes to remove CAISO charges for negative energy for NGRs that are classified as exempt from such charges in the Master File
Adjustment Process

• NGRs subject to duplicate billing will be identified and indication of such will be managed in Master File
• The NGR is **not assessed** charges for the “charging” of the NGR
• CAISO will zero out any settlement for the resource where its Energy is below 0 MWh in a settlement interval
• Authorized entity (Requestor) must provide CAISO required information to request a “No Net” indicator for an NGR
• CAISO has established a process to confirm the Requestor’s claim that the identified NGR is associated with a UDC or retail utility that does not net out its billing between wholesale and retail
Removal of Charges

• Removal of charges (force to $0.00) will not be made unless:
  – Resource ID has a “No Net” indicator in Master File
  – Master File has passed the indicator to Settlements
  – Settlements dispositions the imbalance (MWhs or $$) for removal of charges
SYSTEM CHANGES
Master File updated to allow NGRs to be classified as “No Net” for Settlement purposes

NGR resources will need to request a classification of “No Net” for Settlements purposes

If request approved, a GRDT change request will be made for the classification and M&CI will update the Master File

The Master File script with a “No Net” classification will be sent to Settlements for use as needed

If an NGR resource with a “No Net” classification has any settlement intervals with negative energy (MWh <0), the charges will be forced to $0.00.
Summary of Changes

• Master File:
  – Add a new indicator “No Net” that may be assigned to NGRs
    • APPLY_WHLSL_CHARGE = ‘N’

• GRDT:
  – Add a new field for “No Net”
Summary of Changes, cont.

- Settlements:
  - Receive new “No Net” indicator assigned to NGRs
  - Enable removal of charges for NGRs where:
    - NGR has a “No Net” indicator
    - MWh for any settlement interval is <0 MWh
    - Force charges to $0.00 for such settlement intervals
    - Handle imbalance of MWhs/$$ that are removed
  - Add/modify billing determinants as needed
SETTLEMENT IMPLICATIONS
## Settlement Charge Code Impacts

<table>
<thead>
<tr>
<th>Project</th>
<th>Charge Codes/Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>FERC Order No. 841 – requested adjustment</td>
<td>6011, 6460, 6470, 6474, 6475, 6482, 6488, 6824, 7070, 7071, 7077, 7081, 7087, 64600, 64700, 64740, 64750</td>
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<tr>
<td>Effective date: 10/1/2020</td>
<td>IFM Net Amount PC, RTM Net Amount PC, Real Time Energy Quantity PC, RUC Net Amount PC</td>
</tr>
</tbody>
</table>

Note: for more information on Settlement impacts, attend the Settlements User Group bi-weekly meeting
NEXT STEPS
# FERC 841 Milestones

<table>
<thead>
<tr>
<th>Date</th>
<th>Milestone</th>
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</thead>
<tbody>
<tr>
<td>July 27 – September 4, 2020</td>
<td>Market Simulation</td>
</tr>
<tr>
<td>October 1, 2020</td>
<td>Deployment</td>
</tr>
<tr>
<td>October 2020</td>
<td>Production Activation/Effective Trade Date</td>
</tr>
</tbody>
</table>
Market Simulation Overview

• Market Simulation to verify:
  – NGR resources are classified as “No Net” for settlement purposes
  – “No Net” NGRs do not receive charges for settlement intervals with negative MWh (MWh <0)

• How to get an NGR resource classified as “No Net”
  – Administrative process – M&CI Lead
  – Update to GRDT
Preparations for Market Sim:

- Create Registrations for NGRs with exemption for CAISO wholesale charges (BRQ001)
- Register NGR resources in Master File per the following by 7/20/2020:
  - NGR resource at least one Resource ID must be flagged as APPLY_WHLSL_CHARGE = ‘N’ (BRQ001, BRQ005, BRQ010)
- Develop SQMD data sets for Resource IDs to be used in Mkt. Sim
  - NGR Resource ID by 7/23/2020
## Market Sim Scenario #1

<table>
<thead>
<tr>
<th>Scenario Execution Trade Date(s): &lt;TBD&gt;</th>
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</thead>
<tbody>
<tr>
<td><strong>Scenario #1</strong></td>
</tr>
<tr>
<td>Demonstrate the initial settlement of DA, FMM, RT, RUC.</td>
</tr>
<tr>
<td><strong>Description</strong></td>
</tr>
<tr>
<td>Run the market for DA, FMM, RTM, RUC</td>
</tr>
<tr>
<td><strong>Expected System Outcome</strong></td>
</tr>
<tr>
<td>Awards to charge will be zeroed out from being settled.</td>
</tr>
<tr>
<td><strong>Anticipated Settlement Outcome</strong></td>
</tr>
<tr>
<td>CC 6011, 6460, 6470, 64600, 64700</td>
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</table>
## Scenario Execution Trade Date(s): <TBD>

<table>
<thead>
<tr>
<th>Scenario #2</th>
<th>Validate the Recalk settlement of DA, FMM, RT, RUC.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Run the market for DA, FMM, RTM, RUC</td>
</tr>
<tr>
<td>Expected System Outcome</td>
<td>Awards to charge will be zeroed out from being settled.</td>
</tr>
<tr>
<td>Anticipated Settlement Outcome</td>
<td>CC 6011, 6460, 6470, 64600, 64700</td>
</tr>
</tbody>
</table>
Note: Market Sim scenarios #3 and #4 are similar except that the ISO will publish an Initial Statement in scenario #3 and a Recalk Statement in #4.
Market Sim Scenario #5 & #6

<table>
<thead>
<tr>
<th>Scenario Execution Trade Date(s): &lt;TBD&gt;</th>
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</thead>
<tbody>
<tr>
<td>Scenario #5</td>
</tr>
<tr>
<td>Description</td>
</tr>
<tr>
<td>Expected System Outcome</td>
</tr>
<tr>
<td>Anticipated Settlement Outcome</td>
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</tbody>
</table>

Note: Market Sim scenarios #5 and #6 are similar except that the ISO will publish an Initial Statement in scenario #5 and a Recalk Statement in #6
## Market Sim Scenario #7

<table>
<thead>
<tr>
<th>Scenario Execution Trade Date(s): &lt;TBD&gt;</th>
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</thead>
<tbody>
<tr>
<td><strong>Scenario #7</strong></td>
</tr>
<tr>
<td>Validate settlement of exceptional dispatch to charge.</td>
</tr>
<tr>
<td><strong>Description</strong></td>
</tr>
<tr>
<td>Exceptional Dispatch to charge</td>
</tr>
<tr>
<td><strong>Expected System Outcome</strong></td>
</tr>
<tr>
<td>Resources exceptionally dispatched to charge will not be settled for this instruction.</td>
</tr>
<tr>
<td><strong>Anticipated Settlement Outcome</strong></td>
</tr>
<tr>
<td>CC 6482, 6488</td>
</tr>
</tbody>
</table>
RESOURCES
**BPMs impacted**

<table>
<thead>
<tr>
<th>BPM</th>
<th>Description of Impact(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market Instruments</td>
<td>Attachment B - Adding new attribute in Master File and GRDT</td>
</tr>
<tr>
<td>Metering</td>
<td>Will include description of the process and requirements for assigning new classification to NGRs for exemption of charges for “charging energy”</td>
</tr>
<tr>
<td>Settlements &amp; Billing</td>
<td>Configuration changes to exempt NGRs having the new classification for exemption of charges for “charging energy”</td>
</tr>
</tbody>
</table>
• Information related to this FERC Order 841 filing can be found on the following CAISO web page at:
  – Response to Order on Further Compliance - Order 841 - Electric Storage Participation (ER19-468)

Home>Rules>Regulatory>Regulatory filings and orders
http://www.caiso.com/rules/Pages/Regulatory/RegulatoryFilingsAndOrders.aspx
Information for this initiative can be found under Fall 2020 Releases located on the following CAISO webpage at:

- Business Requirements (BRS)
- Market Simulation Structured Scenarios
- Draft Configuration Output Guide

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

www.caiso.com

Or send an email to:
CustomerReadiness@caiso.com
The following slides list questions the CAISO received during the FREC 841 training webinar and their corresponding answers.

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CAISO Customer Questions

Q: Where will this process be documented outside of this training”
A: This will process will be documented in the Metering BPM

Q: How will the ISO know if charged energy for these identified NGRs are retail or wholesale?
A: All charges for these types of identifies recourses will be “zeroed out”. No distinction on retail or wholesale charges will be made
Q: If an NGR is identified as one of these resources, does that preclude it from being used as an Ancillary Service?
A: No, they would still be able to participate as an AS

Q: Approximately how many NGRs fall into this category?
A: We currently do not have a metric on how many but expectations are not many
CAISO Customer Questions

Q: How will this process be integrated with co-located resources where NGRs are paired with VERs?
A: If you have a co-located resources where NGRs paired with VERS have a mingled retail/wholesale meter, please submit a CIDI ticket with your question. If not, non-issue

Q: Will the ISO publish an examples that entities can refer back to?
A: The ISO has requested entities to submit a request to include their resources in the Market Sim process. Please see Market Sim scenarios document.
Q: Where is the requirement for virtual resources to be included in Market Sim?

A: No specific requirements needed, companies just need to submit which resources they want to have participating, though the window may be closed/ closing soon for resource submittal.