CAISO Market Results Interface (CMRI) Interface Specification

Spring 2014 Release

Version: 2.1

November 20, 2013
### Revision History

<table>
<thead>
<tr>
<th>Date</th>
<th>Version</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>11/20/2013</td>
<td>2.1</td>
<td>Eliminated the &quot;retrieveEIRForecast&quot; service from the spring 2014 CMRI API specifications document. DA &amp; HA forecasts will be from the PIRP system.</td>
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<td>12.2.1 Element Table</td>
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1 Introduction

1.1 Purpose
This document describes request and response XSDs related to the CAISO Market Results Interface (CMRI) system.

1.2 Related Documents
# Document Release Notes

## 2.1 Version 2.0

This document release version 2.0 affects the following system data interface specifications:

<table>
<thead>
<tr>
<th>#</th>
<th>Service</th>
<th>Schema XSD</th>
<th>Version #</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Major</td>
</tr>
</tbody>
</table>
| 1  | retrieveExpectedEnergy (updated)      | RequestExpectedEnergy_v2.xsd
ExpectedEnergy_v2.xsd                          | 2         | v20140401|
| 2  | retrieveExpectedEnergyAllocationDetails (updated) | RequestExpectedEnergyAllocationDetails_v2.xsd
ExpectedEnergyAllocationDetails_v2.xsd          | 2         | v20140401|
| 3  | retrieveISOCommitmentCostDetails (updated) | RequestISOCommitmentCostDetails_v2.xsd
ISOCommitmentCostDetails_v2.xsd                 | 2         | v20140401|
| 4  | retrieveNonDispatchableTimeRanges (new) | RequestNonDispatchableTimeRanges_v1.xsd
NonDispatchableTimeRanges_v1.xsd                | 1         | v20140401|
| 5  | retrieveMarketSchedules (new)         | RequestMarketSchedules_v1.xsd
MarketSchedules_v1.xsd                          | 1         | v20140401|
| 6  | retrieveMarketForecast (new)          | RequestResourceForecast_v1.xsd
ResourceForecast_v1.xsd                         | 1         | v20140401|
3 Retrieve Conformed Dispatch Notice

3.1 Operation Details
The service has one operation with three message types. All input and output messages are in XML format.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Message Types</th>
<th>Message Type</th>
<th>WSDL</th>
<th>XSD</th>
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<tbody>
<tr>
<td>Retrieve ConformedDispatchNotice</td>
<td>Input</td>
<td>RetrieveConformedDispatchNoticeRequest</td>
<td>retrieveConformedDispatchNotice_v1.wsdl</td>
<td>RequestConformedDispatchNotice_v1.xsd</td>
</tr>
<tr>
<td></td>
<td></td>
<td>retrieveConformedDispatchNotice_DocAttachRequest</td>
<td>retrieveConformedDispatchNotice_v1_DocAttach.wsdl</td>
<td>ConformedDispatchNotice_v1.xsd</td>
</tr>
<tr>
<td></td>
<td>Output</td>
<td>RetrieveConformedDispatchNoticeResponse</td>
<td>ConformedDispatchNotice_v1.xsd</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fault</td>
<td>faultReturnType</td>
<td>StandardOutput.xsd</td>
<td></td>
</tr>
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</table>

3.2 Conformed Dispatch Notice Request

3.2.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message Header (optional)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Message Payload</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dateTimeStart</td>
<td>Starting DateTime of the time period for which the data is requested.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>dateTimeEnd</td>
<td>Ending DateTime of the time period for which the data is requested.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>scheduling Coordinator</td>
<td>The unique identifier for a scheduling coordinator (SC).</td>
<td>String</td>
<td>Yes</td>
</tr>
<tr>
<td>resource</td>
<td>The unique identifier for a resource.</td>
<td>string</td>
<td>No</td>
</tr>
</tbody>
</table>
### 3.3 Conformed Dispatch Notice Response

#### 3.3.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Message Header</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Message Payload</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ConformedDispNotice class</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>resource (in ConformedDispNotice class)</td>
<td>The unique identifier for a resource.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Scheduling Coordinator</td>
<td>The unique identifier for a scheduling coordinator (SC).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>tradeDate</td>
<td>The trade day to which the current record pertains (in California Prevailing Time).</td>
<td>date</td>
<td>No</td>
</tr>
<tr>
<td>HR</td>
<td>The hour of the trade day to which the current record pertains (in California Prevailing Time).</td>
<td>integer</td>
<td>No</td>
</tr>
<tr>
<td>intervalStartTime</td>
<td>Start time of the market interval</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>intervalEndTime</td>
<td>End time of the market interval</td>
<td>dateTime</td>
<td>No</td>
</tr>
<tr>
<td><strong>VoltageSupport</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flag</td>
<td>Voltage Support Flag. This field indicates if the unit was dispatched for voltage support. Valid values are Y (for yes) and N (for no).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>dispatchMW</td>
<td>DEC MW value dispatched for local voltage support</td>
<td>float</td>
<td>No</td>
</tr>
<tr>
<td><strong>UnitSubstitution</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Precedence</td>
<td>The precedence for unit substitution. The lower number has a higher precedence.</td>
<td>integer</td>
<td>Yes</td>
</tr>
<tr>
<td>resource (in SubstitutableUnit class)</td>
<td>The unique identifier for the substituting resource.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>MW</td>
<td>Scheduled MW value for the substituting resource.</td>
<td>float</td>
<td>Yes</td>
</tr>
<tr>
<td>DayAheadResult</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Element</td>
<td>Data Description</td>
<td>Type</td>
<td>Req’d</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>energy (in DayAheadResults class)</td>
<td>Sum of energy schedules in the Day-Ahead market.</td>
<td>float</td>
<td>No</td>
</tr>
<tr>
<td>spin</td>
<td>Sum of Ancillary Service Spinning Awards.</td>
<td>float</td>
<td>No</td>
</tr>
<tr>
<td>nonSpin</td>
<td>Sum of Ancillary Service Non-Spinning Awards.</td>
<td>float</td>
<td>No</td>
</tr>
<tr>
<td>regUp</td>
<td>Sum of Ancillary Service Regulation Up Awards.</td>
<td>float</td>
<td>No</td>
</tr>
<tr>
<td>regDown</td>
<td>Sum of Ancillary Service Regulation Down Awards.</td>
<td>float</td>
<td>No</td>
</tr>
<tr>
<td>RMRDDispatch (in DayAheadResults class)</td>
<td>Dispatched/scheduled value that was either manually or generated by the market run, pursuant to the RMR Contract.</td>
<td>float</td>
<td>No</td>
</tr>
<tr>
<td>CCR (in DayAheadResults class)</td>
<td>Corresponds to the Competitive Constraint Run value for the Day-Ahead market</td>
<td>float</td>
<td>No</td>
</tr>
</tbody>
</table>

**RealTimeResult**

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td>RMRDDispatchEnergy Total (in RealTimeResults class)</td>
<td>Sum (six intervals) of the RMR Dispatch Energy</td>
<td>float</td>
<td>No</td>
</tr>
<tr>
<td>CCR (in RealTimeResults class)</td>
<td>Corresponds to the Competitive Constraint Run value for the Real-Time market</td>
<td>float</td>
<td>No</td>
</tr>
</tbody>
</table>

**RMRDispatchEnergy**

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td>intervalNum</td>
<td>The interval number. An interval represents a specific part of a trade hour to which the current record pertains. A trade hour may comprise of one or more intervals, of equal duration, based on the interval duration. For example, if the interval duration is 60 minutes, the trade hour will comprise of only one interval of 60 minutes. If, on the other hand, the interval duration is 15 minutes, the trade hour will comprise of four intervals of 15 minutes each. The intervals are numbered sequentially starting with the earliest one numbered 1.</td>
<td>integer</td>
<td>No</td>
</tr>
<tr>
<td>energy (in RMRDispatchEnergy class)</td>
<td>RMR Dispatch Energy per 10-minute intervals.</td>
<td>float</td>
<td>Yes</td>
</tr>
<tr>
<td>dispatchIntervalStartT ime</td>
<td>Start time of the dispatch energy interval</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>dispatchIntervalEndT ime</td>
<td>End time of the dispatch energy interval</td>
<td>dateTime</td>
<td>No</td>
</tr>
</tbody>
</table>
4 Retrieve Contract Usage

4.1 Operation Details
The service has one operation with three message types. All input and output messages are in XML format.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Message Types</th>
<th>Message</th>
<th>WSDL</th>
<th>XSD</th>
</tr>
</thead>
<tbody>
<tr>
<td>retrieveContract</td>
<td>Input</td>
<td>retrieveContractUsageRequest</td>
<td>retrieveContractUsage_v2.wsdl</td>
<td>RequestContractUsage_v2.xsd</td>
</tr>
<tr>
<td></td>
<td></td>
<td>retrieveContractUsage_DocAttachRequest</td>
<td>retrieveContractUsage_v2_DocAttach.wsdl</td>
<td>ContractUsage_v2.xsd</td>
</tr>
<tr>
<td></td>
<td>Output</td>
<td>retrieveContractUsageResponse</td>
<td>retrieveContractUsage_v2.wsdl</td>
<td>RequestContractUsage_v2.xsd</td>
</tr>
<tr>
<td></td>
<td></td>
<td>retrieveContractUsage_DocAttachResponse</td>
<td>ContractUsage_v2.xsd</td>
<td></td>
</tr>
<tr>
<td>fault</td>
<td></td>
<td>faultReturnType</td>
<td>StandardOutput.xsd</td>
<td></td>
</tr>
</tbody>
</table>

4.2 Contract Usage Request

4.2.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message Header (optional)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Message Payload</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dateTimeStart</td>
<td>Starting DateTime of the time period for which the data is requested.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>dateTimeEnd</td>
<td>Ending DateTime of the time period for which the data is requested. Maximum of 31 days can be included in this report.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Element</td>
<td>Data Description</td>
<td>Type</td>
<td>Req’d</td>
</tr>
<tr>
<td>-------------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>marketType</td>
<td>The identifier for the market type. Only one market type is allowed in the request. Valid values are DAM (for day ahead market), and RTM (for real-time market)</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>scheduling CoordinatorList</td>
<td>The unique identifier for a scheduling coordinator (SC). At least one SCID is required.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>resourceList</td>
<td>The unique identifier for a resource.</td>
<td>string</td>
<td>No</td>
</tr>
</tbody>
</table>

### 4.3 Contract Usage Response

#### 4.3.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Message Header</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Message Payload</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>resource</td>
<td>The unique identifier for a resource.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>scheduling Coordinator</td>
<td>The unique identifier for a scheduling coordinator (SC).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>marketType</td>
<td>The identifier for the market type. Valid values are DAM (for day ahead market), and RTM (for real-time market)</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>tradeDate</td>
<td>The trade day to which the current record pertains (in California Prevailing Time).</td>
<td>date</td>
<td>No</td>
</tr>
<tr>
<td>HR</td>
<td>The hour of the trade day to which the current record pertains (in California Prevailing Time).</td>
<td>integer</td>
<td>No</td>
</tr>
<tr>
<td>intervalNum</td>
<td>The interval number. An interval represents a specific part of a trade hour to which the current record pertains. A trade hour may comprise of one or more intervals. In the case of the CRN report, it would be 1 to 6 intervals per hour; covering a 10-minute interval duration period.</td>
<td>integer</td>
<td>No</td>
</tr>
<tr>
<td>MW</td>
<td>Refers to the self-schedule quantity in MW</td>
<td>float</td>
<td>Yes</td>
</tr>
<tr>
<td>Element</td>
<td>Data Description</td>
<td>Type</td>
<td>Req’d</td>
</tr>
<tr>
<td>-----------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>--------</td>
<td>-------</td>
</tr>
<tr>
<td>contractType</td>
<td>Refers to the contract type of the self-schedule transaction; represented as:</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>ETC - Existing Transmission Contract</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TOR - Transmission Ownership Rights</td>
<td></td>
<td></td>
</tr>
<tr>
<td>contractReferenceNumber</td>
<td>Refers to the specific contract identification number issued by the California ISO to Scheduling Coordinators transactions under Existing Contracts or TORs (Transmission Ownership Rights).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>intervalStartTime</td>
<td>Start time of the market interval</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>intervalEndTime</td>
<td>End time of the market interval</td>
<td>dateTime</td>
<td>No</td>
</tr>
</tbody>
</table>
5 Retrieve Convergence Bid Awards

5.1 Operation details
The service has one operation with three message types. All input and output messages are in XML format.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Message Types</th>
<th>Message Types</th>
<th>WSDL</th>
<th>XSD</th>
</tr>
</thead>
<tbody>
<tr>
<td>retrieveConvergenceBidAward</td>
<td>Input</td>
<td>retrieveConvergenceBidAwardsRequest</td>
<td>retrieveConvergenceBidAwards_v1.wsdl</td>
<td>RequestConvergenceBidAwards_v1.xsd</td>
</tr>
<tr>
<td></td>
<td></td>
<td>retrieveConvergenceBidAwards_DocAttachRequest</td>
<td>retrieveConvergenceBidAwards_v1_DocAttach.wsdl</td>
<td>ConvergenceBidAwards_v1.xsd</td>
</tr>
<tr>
<td></td>
<td>Output</td>
<td>RetrieveConvergenceBidAwardsResponse</td>
<td></td>
<td>StandardOutput.xsd</td>
</tr>
<tr>
<td></td>
<td></td>
<td>retrieveConvergenceBidAwards_DocAttachResponse</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fault</td>
<td></td>
<td>faultReturn_type</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5.2 Convergence Bid Awards Request

5.2.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message Header (optional)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor version identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Message Payload</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dateTimeStart</td>
<td>Starting DateTime of the time period for which the data is requested.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>dateTimeEnd</td>
<td>Ending DateTime of the time period for which the data is requested. Maximum of 31 days can be included in this report.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>schedulingCoordinator</td>
<td>The list of the unique identifier for a scheduling coordinator (SC).</td>
<td>String</td>
<td>Yes</td>
</tr>
<tr>
<td>Element</td>
<td>Data Description</td>
<td>Type</td>
<td>Req’d</td>
</tr>
<tr>
<td>-------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>---------</td>
<td>-------</td>
</tr>
<tr>
<td>Pnode</td>
<td>The list of PNode or APNode ID associated with the node where convergence bidding occurred</td>
<td>String</td>
<td>No</td>
</tr>
<tr>
<td>virtualBidType</td>
<td>Indicates whether this is a virtual demand or supply bid. Valid values are: “VIRTUAL SUPPLY” or “VIRTUAL DEMAND”</td>
<td>String</td>
<td>No</td>
</tr>
</tbody>
</table>

### 5.3 Convergence Bid Awards Response

#### 5.3.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message Header</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor version identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Message Payload</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pnode</td>
<td>The PNode or APNode ID associated with the node where convergence bidding occurred</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>isIntertie</td>
<td>The flag indicating whether the award is for an intertie or not. Valid Values: Yes – indicates that the award is for an intertie; No – indicates that the award is not for an intertie</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Scheduling Coordinator</td>
<td>The unique identifier for a scheduling coordinator (SC).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>tradeDate</td>
<td>The trade day to which the current record pertains (in California Prevailing Time).</td>
<td>date</td>
<td>Yes</td>
</tr>
<tr>
<td>virtualBidType</td>
<td>Indicates whether this is a virtual demand or supply bid. Valid values are: “VIRTUAL SUPPLY” or “VIRTUAL DEMAND”</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>HR</td>
<td>The hour of the trade day to which the current record pertains (in California Prevailing Time).</td>
<td>integer</td>
<td>Yes</td>
</tr>
<tr>
<td>MW</td>
<td>This is the cleared convergence bid MW</td>
<td>float</td>
<td>Yes</td>
</tr>
<tr>
<td>intervalStartTime</td>
<td>Start time of the market interval</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>intervalEndTime</td>
<td>End time of the market interval</td>
<td>dateTime</td>
<td>No</td>
</tr>
</tbody>
</table>
6 Retrieve CRR Adjustment Constraints

6.1 Operation Details
The service has one operation with three message types. All input and output messages are in XML format.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Message Types</th>
<th>Message</th>
<th>WSDL</th>
<th>XSD</th>
</tr>
</thead>
<tbody>
<tr>
<td>RetrieveCRRAdj ustmentConstraints</td>
<td>Input</td>
<td>retrieveCRRAdj ustmentConstra intsRequest</td>
<td>retrieveCRRAdj ustmentConstraints_v1.wsdl retrieveCRRAdj ustmentConstraints_DocA ttachRequest</td>
<td>RequestCRRAdj ustmentData_v1.xsd</td>
</tr>
<tr>
<td></td>
<td>Output</td>
<td>retrieveCRRAdj ustmentConstra intsResponse retrieveCRRAdj ustmentConstraints_DocA ttachResponse</td>
<td></td>
<td>CRRAdj ustmentData_v1.xsd</td>
</tr>
<tr>
<td></td>
<td>Fault</td>
<td>faultReturnType</td>
<td></td>
<td>StandardOutput.xsd</td>
</tr>
</tbody>
</table>

6.2 CRR AdjustmentConstraints Request

6.2.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req'd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message Header (optional)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>Message Payload</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dateTimeStart</td>
<td>Starting DateTime of the time period for which the data is requested.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>dateTimeEnd</td>
<td>Ending DateTime of the time period for which the data is requested. Maximum of 31 days can be included in this report.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Element</td>
<td>Data Description</td>
<td>Type</td>
<td>Req’d</td>
</tr>
<tr>
<td>-----------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>---------</td>
<td>-------</td>
</tr>
<tr>
<td>Scheduling CoordinatorList</td>
<td>The list of the unique identifier for a scheduling coordinator (SC).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>ConstraintList</td>
<td>The list of unique identifier of the transmission constraint that impacted the CRR portfolio due to convergence bidding</td>
<td>string</td>
<td>No</td>
</tr>
</tbody>
</table>

### 6.3 CRR AdjustmentConstraints Response

#### 6.3.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Message Header</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>String</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Message Payload</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>tradeDate</td>
<td>The market trading day on when the CRR settlement rule is applicable on</td>
<td>date</td>
<td>No</td>
</tr>
<tr>
<td>schedulingCoordinator</td>
<td>Unique identifier of the scheduling coordinator certified by the CAISO to submit convergence bids via a convergence bidding agreement</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>name</td>
<td>The unique identifier of the transmission constraint that impacted the CRR portfolio due to convergence bidding</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>node</td>
<td>The Full Network Model node identifier associated with the transmission constraint</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>HR</td>
<td>The hour of the trade day to which the current record pertains (in California Prevailing Time).</td>
<td>integer</td>
<td>No</td>
</tr>
</tbody>
</table>

Note: The response CRRAdjustmentData schema is used for all three following services: CRRAdjustmentPrices, CRRAdjustmentConstraints, and CRRAdjustmentFlowImpact. The data elements described below are those relevant in providing the output for the `retrieveCRRAdjustmentConstraints` service only.
<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td>HASPPhysical</td>
<td>Flag indicating either of the following:</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>☐ YES = Denotes that the node’s impact to the CRR settlement rule was due to</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>physical bidding activity, that is reduced in the HASP market</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐ NO = Denotes that the node’s impact to the CRR settlement rule was due to</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>convergence bidding activity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>intervalStartTime</td>
<td>Start time of the market interval</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>intervalEndTime</td>
<td>End time of the market interval</td>
<td>dateTime</td>
<td>No</td>
</tr>
</tbody>
</table>
7 Retrieve CRR Adjustment Flow Impact

7.1 Operation Details
The service has one operation with three message types. All input and output messages are in XML format.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Message Types</th>
<th>Message</th>
<th>WSDL</th>
<th>XSD</th>
</tr>
</thead>
<tbody>
<tr>
<td>RetrieveCRRAdjustmentFlowImpact</td>
<td>Input</td>
<td>retrieveCRRAdjustmentFlowImpactRequest</td>
<td>retrieveCRRAdjustmentFlowImpact_v1.wsdl</td>
<td>RequestCRRAdjustmentData_v1.xsd</td>
</tr>
<tr>
<td></td>
<td></td>
<td>retrieveCRRAdjustmentFlowImpact_DocAttachRequest</td>
<td>retrieveCRRAdjustmentFlowImpact_v1_DocAttach.wsdl</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Output</td>
<td>retrieveCRRAdjustmentFlowImpactResponse</td>
<td>CRRAdjustmentData_v1.xsd</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>retrieveCRRAdjustmentFlowImpact_DocAttachResponse</td>
<td>StandardOutput.xsd</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fault</td>
<td>faultReturn</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7.2 CRR Adjustment FlowImpact Request

7.2.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req'd</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Message Header (optional)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td></td>
</tr>
<tr>
<td><strong>Message Payload</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dateTimeStart</td>
<td>Starting DateTime of the time period for which the data is requested.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>dateTimeEnd</td>
<td>Ending DateTime of the time period for which the data is requested. Maximum of 31 days can be included in this report.</td>
<td>dateTime</td>
<td></td>
</tr>
<tr>
<td>SchedulingCoordinatorList</td>
<td>The list of the unique identifier for a scheduling coordinator (SC).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Element</td>
<td>Data Description</td>
<td>Type</td>
<td>Req’d</td>
</tr>
<tr>
<td>------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>--------</td>
<td>-------</td>
</tr>
<tr>
<td>ConstraintList</td>
<td>The list of unique identifier of the transmission constraint that impacted the CRR portfolio due to convergence bidding</td>
<td>string</td>
<td>No</td>
</tr>
</tbody>
</table>

### 7.3 CRR AdjustmentFlowImpact Response

#### 7.3.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Message Header</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Message Payload</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The response CRRAdjustmentData schema is used for all three following services: CRRAdjustmentPrices, CRRAdjustmentConstraints, and CRRAdjustmentFlowImpact. The data elements described below are those relevant in providing the output for the retrieveCRRAdjustmentFlowImpact service only.

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td>tradeDate</td>
<td>The market trading day on when the CRR settlement rule is applicable on</td>
<td>date</td>
<td>No</td>
</tr>
<tr>
<td>schedulingCoordinator</td>
<td>Unique identifier of the scheduling coordinator certified by the CAISO to submit convergence bids via a convergence bidding agreement</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>CBEMGroup</td>
<td>The convergence bidding entity group name that coincides with a CRR Holder Name</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>name</td>
<td>The unique identifier of the transmission constraint that impacted the CRR portfolio due to convergence bidding</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>HR</td>
<td>The hour of the trade day to which the current record pertains (in California Prevailing Time).</td>
<td>integer</td>
<td>No</td>
</tr>
<tr>
<td>MW</td>
<td>The total hourly amount of flow (MW) impacted by the CRR settlement rule</td>
<td>float</td>
<td>No</td>
</tr>
<tr>
<td>intervalStartTime</td>
<td>Start time of the market interval</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>intervalEndTime</td>
<td>End time of the market interval</td>
<td>dateTime</td>
<td>No</td>
</tr>
</tbody>
</table>
8 Retrieve CRR Adjustment Prices

8.1 Operation Details

The service has one operation with three message types. All input and output messages are in XML format.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Message Types</th>
<th>Message Types</th>
<th>WSDL</th>
<th>XSD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retrieve CRR Adjustment Prices</td>
<td>Input</td>
<td>retrieveCRRAdjustmentPricesRequest retrieveCRRAdjustmentPrices_DocAttach Request</td>
<td>retrieveCRRAdjustmentPrices_v1.wsdl</td>
<td>CRRAdjustmentPrices_v1_DocAttach.wsdl RequestCRRAdjustmentDataNoHour_v1.xsd</td>
</tr>
<tr>
<td></td>
<td>Output</td>
<td>retrieveCRRAdjustmentPricesResponse retrieveCRRAdjustmentPrices_DocAttach Response</td>
<td>CRRAdjustmentPrices_v1_DocAttach.wsdl</td>
<td>CRRAdjustmentData_v1.xsd</td>
</tr>
<tr>
<td></td>
<td>Fault</td>
<td>faultReturnType</td>
<td></td>
<td>StandardOutput.xsd</td>
</tr>
</tbody>
</table>

8.2 CRR AdjustmentPrices Request

8.2.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req'd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message Header (optional)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Message Payload</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dateTimeStart</td>
<td>Starting DateTime of the time period for which the data is requested.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>dateTimeEnd</td>
<td>Ending DateTime of the time period for which the data is requested. Maximum of 31 days can be included in this report.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Scheduling CoordinatorList</td>
<td>The list of the unique identifier for a scheduling coordinator (SC).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>ConstraintList</td>
<td>The list of unique identifier of the transmission constraint that impacted the CRR portfolio due to convergence bidding</td>
<td>string</td>
<td>No</td>
</tr>
</tbody>
</table>
8.3 **CRR AdjustmentPrices Response**

### 8.3.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Message Header</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>of the message was produced.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>version update was related to.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Message Payload</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>tradeDate</td>
<td>The market trading day on when the CRR settlement rule is applicable on</td>
<td>date</td>
<td>No</td>
</tr>
<tr>
<td>schedulingCoordinator</td>
<td>Unique identifier of the Scheduling Coordinator certified by the CAISO who is</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>a CRR Holder entity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>name</td>
<td>The unique identifier of the transmission constraint that impacted the CRR</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>portfolio due to convergence bidding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRR</td>
<td>The CRR unique identifier impacted by the CRR settlement</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>rule due to convergence bidding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HR</td>
<td>The hour of the trade day to which the current record pertains</td>
<td>integer</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>(in California Prevailing Time).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Price</td>
<td>The calculated price which is the difference between the Day-Ahead and Real-Time</td>
<td>float</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>due to convergence bidding with impact on the CRR portfolio</td>
<td></td>
<td></td>
</tr>
<tr>
<td>intervalStartTime</td>
<td>Start time of the market interval</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>intervalEndTime</td>
<td>End time of the market interval</td>
<td>dateTime</td>
<td>No</td>
</tr>
</tbody>
</table>
9 Retrieve Default Bid Curves

9.1 Operation Details
The service has one operation with three message types. All input and output messages are in XML format.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Message Types</th>
<th>Message Types</th>
<th>WSDL</th>
<th>XSD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retrieve Default Bid</td>
<td>Input</td>
<td>retrieveDefaultBidCurvesRequest</td>
<td>retrieveDefaultBidCurves_v1.wsdl</td>
<td>RequestDefaultBidCurves_v1.xsd</td>
</tr>
<tr>
<td>Curves</td>
<td></td>
<td>retrieveDefaultBidCurves_DocAttachRequest</td>
<td>retrieveDefaultBidCurves_v1_DocAttachRequest.wsdl</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Output</td>
<td>retrieveDefaultBidCurvesResponse</td>
<td></td>
<td>DefaultBidCurves_v1.xsd</td>
</tr>
<tr>
<td></td>
<td></td>
<td>faultReturnType</td>
<td></td>
<td>StandardOutput.xsd</td>
</tr>
</tbody>
</table>

9.2 Default Bid Curves Request

9.2.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message Header (optional)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Message Payload</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dateTimeStart</td>
<td>Starting DateTime of the time period for which the data is requested.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>dateTimeEnd</td>
<td>Ending DateTime of the time period for which the data is requested. Maximum of 31 days can be included in this report.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>marketTypeList</td>
<td>The identifier for the market type. Valid values are DAM (for day ahead market), and RTM (for the HASP reports).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Element</td>
<td>Data Description</td>
<td>Type</td>
<td>Req’d</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>--------</td>
<td>-------</td>
</tr>
<tr>
<td>scheduling CoordinatorList</td>
<td>The unique identifier for a scheduling coordinator (SC).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>defaultBidTypeList</td>
<td>This element represents the basis on which the default bid price curve is created. Valid values are COST (for cost basis), LMP (for LMP basis), and NEGOTIATED (for negotiated price as the basis).</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>resourceList</td>
<td>The unique identifier for a resource.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>TimePeriodList</td>
<td>The time period to which the default bid price curve applies. Valid values are ON_PEAK (for on-peak hours), and OFF_PEAK (for off-peak hours). • All 24 hours are set to off-peak on holidays as defined by WSCC • On regular days- Monday thru Saturday, hour-ending 7 to hour-ending 22 are on-peak; and the rest of the hours including Sunday is off-peak</td>
<td>string</td>
<td>No</td>
</tr>
</tbody>
</table>

### 9.3 Default BidCurves Response

#### 9.3.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Message Header</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Message Payload</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>resource</td>
<td>The unique identifier for a resource.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>resourceType</td>
<td>The type of resource. Valid values are GEN (for a generating resource), LOAD (for a load resource) and ITIE (for an intertie resource).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>configuration</td>
<td>The unique identifier for a configuration of an MSG (multi-stage generator) resource. This element will be populated when the transaction applies to an MSG resource; otherwise this element will not be included in the output payload.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>Element</td>
<td>Data Description</td>
<td>Type</td>
<td>Req’d</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>----------</td>
<td>-------</td>
</tr>
<tr>
<td>scheduling Coordinator</td>
<td>The unique identifier for a scheduling coordinator (SC).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>marketType</td>
<td>The identifier for the market type. Valid values are DAM (for day ahead market), and RTM (for the HASP reports).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>tradeDate</td>
<td>The trade day to which the current record pertains (in California Prevailing Time).</td>
<td>date</td>
<td>No</td>
</tr>
</tbody>
</table>
| timePeriod                  | The time period to which the default bid price curve applies. Valid values are ON_PEAK (for on-peak hours), and OFF_PEAK (for off-peak hours).  
  - All 24 hours are set to off-peak on holidays as defined by WSCC  
  - On regular days- Monday thru Saturday, hour-ending 7 to hour-ending 22 are on-peak; and the rest of the hours including Sunday is off-peak | string   | Yes   |
| defaultBidType              | This element represents the basis on which the default bid price curve is created. Valid values are COST (for cost basis), LMP (for LMP basis), and NEGOTIATED (for negotiated price as the basis). | string   | Yes   |
| startTime                   | The effective start datetime for the default bid curve (in California Prevailing Time). | dateTime | No    |
| endTime                     | The effective end datetime for the default bid curve (in California Prevailing Time). | dateTime | No    |
| adderFlag                   | A flag to indicate if bid adder value has been applied to the bid.              | string   | Yes   |
| segmentNum                  | The segment number for the bid price curve.                                     | integer  | Yes   |
| MW                          | The MW value for the specified segment of the bid price curve.                   | float    | Yes   |
| price                       | The price ($ per MW) value for the specified segment of the bid price curve.      | float    | Yes   |
| segmentBidType              | For a LMP bid, this element represents the bid type of the segment. Valid values are COST (for cost basis), LMP (for LMP basis), and NEGOTIATED (for negotiated price as the basis). | string   | No    |
| intervalStartTime           | Start time of the market interval                                                | dateTime | Yes   |
| intervalEndTime             | End time of the market interval                                                  | dateTime | No    |
10 Retrieve Default RMR Costs

10.1 Operation Details

The service has one operation with three message types. All input and output messages are in XML format.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Message Types</th>
<th>Message</th>
<th>WSDL</th>
<th>XSD</th>
</tr>
</thead>
<tbody>
<tr>
<td>RetrieveDefaultRMRCosts</td>
<td>Input</td>
<td>RetrieveDefaultRMRCostsRequest</td>
<td>RetrieveDefaultRMRCosts_v1.wsdl</td>
<td>RequestDefaultRMRCosts_v1.xsd</td>
</tr>
<tr>
<td></td>
<td></td>
<td>retrieveDefaultRMRCosts_DocAttachRequest</td>
<td>retrieveDefaultRMRCosts_v1_DocAttach.wsdl</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Output</td>
<td>RetrieveDefaultRMRCostsResponse</td>
<td>RetrieveDefaultRMRCosts_v1.wsdl</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>retrieveDefaultRMRCosts_DocAttachResponse</td>
<td>retrieveDefaultRMRCosts_v1_DocAttach.wsdl</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fault</td>
<td>faultReturnType</td>
<td></td>
<td>DefaultRMRCosts_v1.xsd</td>
</tr>
</tbody>
</table>

10.2 Default RMR Costs Request

10.2.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req'd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message Header (optional)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Message Payload</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dateTimeStart</td>
<td>Starting DateTime of the time period for which the data is requested.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>dateTimeEnd</td>
<td>Ending DateTime of the time period for which the data is requested. Maximum of 31 days can be included in this report.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>scheduling</td>
<td>The unique identifier for a scheduling coordinator (SC).</td>
<td>String</td>
<td>Yes</td>
</tr>
<tr>
<td>CoordinatorList</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>resource</td>
<td>The unique identifier for a resource.</td>
<td>String</td>
<td>No</td>
</tr>
</tbody>
</table>
## 10.3 Default RMR Costs Response

### 10.3.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Message Header</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Message Payload</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>resource</td>
<td>The unique identifier for a resource.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Scheduling Coordinator</td>
<td>The unique identifier for a scheduling coordinator (SC).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>tradeDate</td>
<td>The trade day to which the current record pertains (in California Prevailing Time).</td>
<td>date</td>
<td>No</td>
</tr>
<tr>
<td>intervalStartTime</td>
<td>Start time of the market interval</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>intervalEndTime</td>
<td>End time of the market interval</td>
<td>dateTime</td>
<td>No</td>
</tr>
<tr>
<td>minLoadCost</td>
<td>Default minimum load cost.</td>
<td>float</td>
<td>Yes</td>
</tr>
<tr>
<td>segmentNum</td>
<td>The segment number for the startup cost curve.</td>
<td>integer</td>
<td>Yes</td>
</tr>
<tr>
<td>minutes</td>
<td>Cooling time in minutes for the segment of the startup cost curve.</td>
<td>float</td>
<td>Yes</td>
</tr>
<tr>
<td>price</td>
<td>Price in dollars for for the segment of the startup cost curve.</td>
<td>float</td>
<td>Yes</td>
</tr>
</tbody>
</table>
11 Retrieve Expected Energy

11.1 Operation Details
The service has one operation with three message types. All input and output messages are in XML format.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Message Types</th>
<th>Message</th>
<th>WSDL</th>
<th>XSD</th>
</tr>
</thead>
<tbody>
<tr>
<td>RetrieveExpectedEnergy</td>
<td>Input</td>
<td>RetrieveExpectedEnergyRequest</td>
<td>RetrieveExpectedEnergy_v1.wsdl</td>
<td>RequestExpectedEnergy_v1.xsd</td>
</tr>
<tr>
<td></td>
<td></td>
<td>retrieveExpectedEnergy_DocAttachRequest</td>
<td>retrieveExpectedEnergy_v1_DocAttach.wsdl</td>
<td>RequestExpectedEnergy_v2.xsd</td>
</tr>
<tr>
<td></td>
<td>Output</td>
<td>RetrieveExpectedEnergyResponse</td>
<td>RetrieveExpectedEnergy_v2.wsdl</td>
<td>ExpectedEnergy_v1.xsd</td>
</tr>
<tr>
<td></td>
<td></td>
<td>retrieveExpectedEnergy_DocAttachResponse</td>
<td>retrieveExpectedEnergy_v2_DocAttach.wsdl</td>
<td>ExpectedEnergy_v2.xsd</td>
</tr>
<tr>
<td></td>
<td>Fault</td>
<td>faultReturnType</td>
<td></td>
<td>StandardOutput.xsd</td>
</tr>
</tbody>
</table>

11.2 Expected Energy Request

11.2.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req'd</th>
</tr>
</thead>
<tbody>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>dateTimeStart</td>
<td>Starting DateTime of the time period for which the data is requested.</td>
<td>dateTime</td>
</tr>
<tr>
<td>dateTimeEnd</td>
<td>Ending DateTime of the time period for which the data is requested. Maximum of 31 days can be included in this report.</td>
<td>dateTime</td>
</tr>
<tr>
<td>scheduling</td>
<td>The unique identifier for a scheduling coordinator (SC).</td>
<td>String</td>
</tr>
<tr>
<td>CoordinatorList</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Element</td>
<td>Data Description</td>
<td>Type</td>
</tr>
<tr>
<td>-------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>resourceList</td>
<td>The unique identifier for a resource.</td>
<td>String</td>
</tr>
</tbody>
</table>

### 11.3 Expected Energy Response

#### 11.3.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Message Header</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Message Payload</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>resource</td>
<td>The unique identifier for a resource.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>configuration</td>
<td>The unique identifier for a configuration of an MSG (multi-stage generator) resource. This element will be populated when the transaction applies to an MSG resource; otherwise this element will not be included in the output payload.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>Scheduling Coordinator</td>
<td>The unique identifier for a scheduling coordinator (SC).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>tradeDate</td>
<td>The trade day to which the current record pertains (in California Prevailing Time).</td>
<td>date</td>
<td>No</td>
</tr>
<tr>
<td>intervalDuration</td>
<td>The duration of an interval in minutes (in California Prevailing Time).</td>
<td>integer</td>
<td>No</td>
</tr>
<tr>
<td>HR</td>
<td>The hour of the trade day to which the current record pertains (in California Prevailing Time).</td>
<td>integer</td>
<td>No</td>
</tr>
<tr>
<td>intervalNum</td>
<td>The interval number. An interval represents a specific part of a trade hour to which the current record pertains. A trade hour may comprise of one or more intervals, of equal duration, based on the interval duration. For example, if the interval duration is 60 minutes, the trade hour will comprise of only one interval of 60 minutes. If, on the other hand, the interval duration is 15 minutes, the trade hour will comprise of four intervals of 15 minutes each. The intervals are numbered sequencially starting with the earliest one numbered 1.</td>
<td>integer</td>
<td>No</td>
</tr>
<tr>
<td>Element</td>
<td>Data Description</td>
<td>Type</td>
<td>Req’d</td>
</tr>
<tr>
<td>------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>energy TypeCode</td>
<td>Energy component for which the settlement allocation is based on.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Examples are: Optimal Energy, Standard Ramping Energy, Ramping Energy Deviation,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Residual Energy, Minimum Load Energy, SLIC Energy, Exceptional Dispatch Energy,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note: For a listing of all of the valid EE types, reference The BPM for Market Operations, Appendix C, Section C.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>expectedEnergy</td>
<td>The expected energy value in MWH unit.</td>
<td>float</td>
<td>Yes</td>
</tr>
<tr>
<td>intervalStartTime</td>
<td>Start time of the market interval</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>intervalEndTime</td>
<td>End time of the market interval</td>
<td>dateTime</td>
<td>No</td>
</tr>
<tr>
<td>MSS-OE overlapping</td>
<td>Indicates that the MSS load following energy overlaps with the optimal energy (Y/N)</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>RTMarketType</td>
<td>Real-time market type that distinguishes between 15 minute and 5 minute market results. Only applies to energyTypeCodes: MLE, SE, EDE, OE, PE, IIE. Valid values: FMM = Fifteen-minute market (15min) RTD = Real-time dispatch market (5min)</td>
<td>string</td>
<td>No</td>
</tr>
</tbody>
</table>
12 Retrieve Expected Energy Allocation Details

12.1 Operation Details
The service has one operation with three message types. All input and output messages are in XML format.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Message Types</th>
<th>Message</th>
<th>WSDL</th>
<th>XSD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fault</td>
<td>faultReturnType</td>
<td></td>
<td>StandardOutput.xsd</td>
</tr>
</tbody>
</table>

12.2 ExpectedEnergyAllocationDetails Request

12.2.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message Header (optional)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Message Payload</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dateTimeStart</td>
<td>Starting DateTime of the time period for which the data is requested.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>dateTimeEnd</td>
<td>Ending DateTime of the time period for which the data is requested. Maximum of 31 days can be included in this report.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Element</td>
<td>Data Description</td>
<td>Type</td>
<td>Req’d</td>
</tr>
<tr>
<td>-------------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>schedulingCoordinatorList</td>
<td>The unique identifier for a scheduling coordinator (SC).</td>
<td>String</td>
<td>Yes</td>
</tr>
<tr>
<td>marketServiceTypeList</td>
<td>Market Service Type. Market Service Type depends on the SC’s bid curve and market results. Valid values are ME (Market Energy Capacity), SR (Spin Capacity), NR (Non-spin Capacity), DAC (Day-Ahead Energy Capacity), DEC (Derate Capacity), NO_BID (when no bid segment is associated with the record).</td>
<td>String</td>
<td>No</td>
</tr>
<tr>
<td>resourceList</td>
<td>The unique identifier for a resource.</td>
<td>String</td>
<td>No</td>
</tr>
<tr>
<td>energyBidType</td>
<td>Distinguishes results that were based on final mitigated energy bids (Final) or results that were based on default energy bids (Default); Valid values: Final or Default Only one type is allowed per request.</td>
<td>string</td>
<td>Yes</td>
</tr>
</tbody>
</table>

12.3 ExpectedEnergyAllocationDetails Response

12.3.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Message Header</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Message Payload</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>resource</td>
<td>The unique identifier for a resource.</td>
<td>String</td>
<td>No</td>
</tr>
<tr>
<td>configuration</td>
<td>The unique identifier for a configuration of an MSG (multi-stage generator) resource. This element will be populated when the transaction applies to an MSG resource; otherwise this element will not be included in the output payload.</td>
<td>String</td>
<td>No</td>
</tr>
<tr>
<td>SchedulingCoordinator</td>
<td>The unique identifier for a scheduling coordinator (SC).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>tradeDate</td>
<td>The trade day to which the current record pertains (in California Prevailing Time).</td>
<td>date</td>
<td>No</td>
</tr>
<tr>
<td>Element</td>
<td>Data Description</td>
<td>Type</td>
<td>Req’d</td>
</tr>
<tr>
<td>--------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------</td>
<td>-------</td>
</tr>
<tr>
<td>intervalDuration</td>
<td>The duration of an interval in minutes (in California Prevailing Time).</td>
<td>integer</td>
<td>No</td>
</tr>
<tr>
<td>HR</td>
<td>The hour of the trade day to which the current record pertains (in California Prevailing Time).</td>
<td>integer</td>
<td>No</td>
</tr>
<tr>
<td>intervalNum</td>
<td>The interval number. An interval represents a specific part of a trade hour to which the current record pertains. A trade hour may comprise of one or more intervals, of equal duration, based on the interval duration. For example, if the interval duration is 60 minutes, the trade hour will comprise of only one interval of 60 minutes. If, on the other hand, the interval duration is 15 minutes, the trade hour will comprise of four intervals of 15 minutes each. The intervals are numbered sequentially starting with the earliest one numbered 1.</td>
<td>integer</td>
<td>No</td>
</tr>
<tr>
<td>marketServiceType</td>
<td>Market Service Type. Market Service Type depends on the SC’s bid curve and market results. Valid values are ME (for Market Energy Capacity), SR (for Spin Capacity), NR (for Non-spin Capacity), DAC (for Day-Ahead Energy Capacity), DEC (for Derate Capacity), NO_BID (when no bid segment is associated with the record).</td>
<td>string</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*Note: For a listing of all of the valid EE types, reference The BPM for Market Operations, Appendix C, Section C.4* | string  | Yes   |
| bidPrice           | The price awarded per Market Service Type from the SC’s Bid Curve in dollar $ unit.                                                                                                                         | float   | No    |
| expectedEnergy     | The expected energy value in MWH unit.                                                                                                                                                                      | float   | Yes   |
| intervalStartTime  | Start time of the market interval                                                                                                                                                                           | dateTime| Yes   |
| intervalEndTime    | End time of the market interval                                                                                                                                                                            | dateTime| No    |
| MSS-OE overlapping | Indicates that the MSS load following energy overlaps with the optimal energy (Y/N)                                                                                                                       | string  | No    |
| energyBidType      | Distinguishes results that were based on final mitigated energy bid (Final) or results that were based on default energy bids (Default); Valid values: Final or Default  

As the request only allows one type, thus the output corresponds to the requested type either Final or Default datasets; ie output will not contain both types. | string  | Yes   |
<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td>RTMarketType</td>
<td>Real-time market type that distinguishes between 15 minute and 5 minute market results. Only applies to energyTypeCodes: MLE, SE, EDE, OE, PE, IIE. Valid values: FMM = Fifteen-minute market (15min) RTD = Real-time dispatch market (5min)</td>
<td>string</td>
<td>No</td>
</tr>
</tbody>
</table>
13 Retrieve Finally Qualified Load Following Capacity

13.1 Operation Details

The service has one operation with three message types. All input and output messages are in XML format.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Message Types</th>
<th>Message</th>
<th>WSDL</th>
<th>XSD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retrieve Finally Qualified Load Following Capacity</td>
<td>Input</td>
<td>RetrieveFinallyQualifiedLoadFollowingCapacityRequest</td>
<td>RetrieveFinallyQualifiedLoadFollowingCapacity_v1.wsdl</td>
<td>RequestFinallyQualifiedLoadFollowingCapacity_v1.xsd</td>
</tr>
<tr>
<td></td>
<td></td>
<td>retrieveFinallyQualifiedLoadFollowingCapacity_DocAttachRequest</td>
<td></td>
<td>FinallyQualifiedLoadFollowingCapacity_v1.xsd</td>
</tr>
<tr>
<td></td>
<td>Output</td>
<td>RetrieveFinallyQualifiedLoadFollowingCapacityResponse</td>
<td></td>
<td>StandardOutput.xsd</td>
</tr>
<tr>
<td></td>
<td></td>
<td>retrieveFinallyQualifiedLoadFollowingCapacity_DocAttachResponse</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13.2 Finally Qualified Load Following Capacity Request

13.2.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message Header (optional)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Message Payload</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dateTimeStart</td>
<td>Starting DateTime of the time period for which the data is requested.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Element</td>
<td>Data Description</td>
<td>Type</td>
<td>Req’d</td>
</tr>
<tr>
<td>--------------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>-------------</td>
<td>-------</td>
</tr>
<tr>
<td>dateTimeEnd</td>
<td>Ending DateTime of the time period for which the data is requested.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Maximum of 31 days can be included in this report.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>marketTypeList</td>
<td>The identifier for the market type. Valid value is DAM (for day ahead market.)</td>
<td>String</td>
<td>Yes</td>
</tr>
<tr>
<td>scheduling CoordinatorList</td>
<td>The unique identifier for a scheduling coordinator (SC).</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>resourceTypeList</td>
<td>The type of resource. valid values for this service are GEN &amp; PUMP</td>
<td>String</td>
<td>No</td>
</tr>
<tr>
<td>LFCTypeList</td>
<td>This field indicates if the schedule is for Load Following Up or Load Following Down capacity. Valid values are UP (for Load Following Up Capacity) and DOWN (for Load Following Down Capacity).</td>
<td>String</td>
<td>No</td>
</tr>
<tr>
<td>resourceList</td>
<td>The unique identifier for a resource.</td>
<td>String</td>
<td>No</td>
</tr>
</tbody>
</table>
13.3 Finally Qualified Load Following Capacity Response

13.3.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Message Header</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Message Payload</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>resource</td>
<td>The unique identifier for a resource.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Scheduling Coordinator</td>
<td>The unique identifier for a scheduling coordinator (SC).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>marketType</td>
<td>The identifier for the market type. Valid value is DAM (for day ahead market)</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>tradeDate</td>
<td>The trade day to which the current record pertains (in California Prevailing Time).</td>
<td>date</td>
<td>No</td>
</tr>
<tr>
<td>resourceType</td>
<td>The type of resource. The only valid value for this service is GEN (for a generating resource).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>intervalDuration</td>
<td>The duration of an interval in minutes (in California Prevailing Time).</td>
<td>integer</td>
<td>No</td>
</tr>
<tr>
<td>LFCType</td>
<td>This field indicates if the schedule is for Load Following Up or Load Following Down capacity. Valid values are UP (for Load Following Up Capacity) and DOWN (for Load Following Down Capacity).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>HR</td>
<td>The hour of the trade day to which the current record pertains (in California Prevailing Time).</td>
<td>integer</td>
<td>No</td>
</tr>
<tr>
<td>intervalNum</td>
<td>The interval number. An interval represents a specific part of a trade hour to which the current record pertains. A trade hour may comprise of one or more intervals, of equal duration, based on the interval duration. For example, if the interval duration is 60 minutes, the trade hour will comprise of only one interval of 60 minutes. If, on the other hand, the interval duration is 15 minutes, the trade hour will comprise of four intervals of 15 minutes each. The intervals are numbered sequentially starting with the earliest one numbered 1.</td>
<td>integer</td>
<td>No</td>
</tr>
<tr>
<td>intervalStartTime</td>
<td>Start time of the market interval</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>intervalEndTime</td>
<td>End time of the market interval</td>
<td>dateTime</td>
<td>No</td>
</tr>
<tr>
<td>MW</td>
<td>Load Following Capacity in MW for the interval.</td>
<td>float</td>
<td>Yes</td>
</tr>
</tbody>
</table>
14 Retrieve Flex Ramp Capacity

14.1 Operation Details

The service has one operation with three message types. All input and output messages are in XML format.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Message Types</th>
<th>Message</th>
<th>WSDL</th>
<th>XSD</th>
</tr>
</thead>
<tbody>
<tr>
<td>retrieveFlexRampCapacity</td>
<td>Input</td>
<td>RetrieveFlexRampCapacityRequest, retrieveFlexRampCapacity_DocAttachRequest</td>
<td>retrieveFlexRampCapacity_v1.wsdl, retrieveFlexRampCapacity_v1_DocAttach.wsdl</td>
<td>RequestFlexRampCapacity_v1.xsd</td>
</tr>
<tr>
<td></td>
<td>Output</td>
<td>RetrieveFlexRampCapacityResponse, retrieveFlexRampCapacity_DocAttachResponse</td>
<td></td>
<td>FlexRampCapacity_v1.xsd</td>
</tr>
<tr>
<td></td>
<td>Fault</td>
<td>faultReturnType</td>
<td></td>
<td>StandardOutput.xsd</td>
</tr>
</tbody>
</table>

14.2 Flex Ramp Capacity Request

14.2.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req'd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message Header (optional)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Message Payload</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dateTimeStart</td>
<td>Starting DateTime of the time period for which the data is requested.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>dateTimeEnd</td>
<td>Ending DateTime of the time period for which the data is requested. Maximum of 31 days can be included in this report.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>scheduling CoordinatorList</td>
<td>The unique identifier/s for a scheduling coordinator (SC).</td>
<td>String</td>
<td>Yes</td>
</tr>
<tr>
<td>Element</td>
<td>Data Description</td>
<td>Type</td>
<td>Req’d</td>
</tr>
<tr>
<td>---------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>--------</td>
<td>-------</td>
</tr>
<tr>
<td>marketTypeList</td>
<td>The identifier for the market type. Valid values are:</td>
<td>String</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>• RTM (for the RTPD/15-min market)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• DAM (for the day ahead market)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> With the Flexible Ramping – Phase 2 project, market results will only be relevant for the “RTM” market.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>productList</td>
<td>The identifier of the product type. Valid values are:</td>
<td>String</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>• FRU (for “Flex Ramp Up”)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• FRD (for “Flex Ramp Down”)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> With the Flexible Ramping – Phase 2 project, only the product “FRU” – Flex Ramp Up market results will only be relevant.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>resourceList</td>
<td>The unique identifier for the resource/s.</td>
<td>String</td>
<td>No</td>
</tr>
</tbody>
</table>

### 14.3 Flex Ramp Capacity Response

#### 14.3.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Message Header</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
</tbody>
</table>

<p>| <strong>Message Payload</strong>                                           |                                                   |        |       |
| resource       | The unique identifier for a resource.                                              | string | Yes   |
| configuration  | The unique identifier for a configuration of an MSG (multi-stage generator) resource. | string | No    |
| scheduling Coordinator | The unique identifier for a scheduling coordinator (SC). | string | Yes   |</p>
<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td>marketType</td>
<td>The identifier for the market type. Values are:</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>• RTM (for the RTPD/15-min market)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• DAM (for the day ahead market)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> With the Flexible Ramping – Phase 2 project, market results will only be relevant for the “RTM” market.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>tradeDate</td>
<td>The trade day to which the current record pertains (in California Prevailing Time).</td>
<td>date</td>
<td>No</td>
</tr>
<tr>
<td>intervalDuration</td>
<td>The duration of an interval in minutes. <strong>Note:</strong> With the Flexible Ramping – Phase 2 project, this value will be “15” minutes, as market results will only be relevant for the “RTPD 15-minute” market.</td>
<td>integer</td>
<td>No</td>
</tr>
<tr>
<td>product</td>
<td>The product associated with the current record. Values are:</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>• FRU (for “Flex Ramp Up”)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• FRD (for “Flex Ramp Down”)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> With the Flexible Ramping – Phase 2 project, only the product “FRU” – Flex Ramp Up market results will only be relevant.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HR</td>
<td>The hour of the trade day to which the current record pertains</td>
<td>integer</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>(in California Prevailing Time).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>intervalNum</td>
<td>The interval number. An interval represents a specific part of a trade hour to which the current record pertains. A trade hour may comprise of one or more intervals, of equal duration, based on the interval duration. For example, if the interval duration is 15 minutes, the trade hour will comprise of four intervals of 15 minutes each. The intervals are numbered sequentially starting with the earliest one numbered 1.</td>
<td>integer</td>
<td>No</td>
</tr>
<tr>
<td>intervalStartTime</td>
<td>Start time of the market interval</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>intervalEndTime</td>
<td>End time of the market interval</td>
<td>dateTime</td>
<td>No</td>
</tr>
<tr>
<td>MW</td>
<td>Capacity MW for the current record.</td>
<td>float</td>
<td>Yes</td>
</tr>
</tbody>
</table>
15 Retrieve ISO Commitment Cost Details

15.1 Operation Details
The service has one operation with three message types. All input and output messages are in XML format.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Message Types</th>
<th>Message</th>
<th>WSDL</th>
<th>XSD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retrieve</td>
<td>Input</td>
<td>RequestISOCommitmentCostDetails</td>
<td>retrieveISOCommitmentCostDetails_v1.wsdl</td>
<td>RequestISOCommitmentCostDetails_v1.xsd</td>
</tr>
<tr>
<td>ISO Commitment Cost</td>
<td>Output</td>
<td>RetrieveISOCommitmentCostDetails</td>
<td>retrieveISOCommitmentCostDetails_v2.wsdl</td>
<td>ISOCommitmentCostDetails_v2.xsd</td>
</tr>
<tr>
<td>Details</td>
<td></td>
<td>DocAttachRequest</td>
<td>retrieveISOCommitmentCostDetails_v2_DocAttach.wsdl</td>
<td>StandardOutput.xsd</td>
</tr>
</tbody>
</table>

15.2 ISO Commitment Cost Details Request

15.2.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Message Header (optional)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Message Payload**

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td>dateTimeStart</td>
<td>Starting DateTime of the time period for which the data is requested.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>dateTimeEnd</td>
<td>Ending DateTime of the time period for which the data is requested.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>scheduling CoordinatorList</td>
<td>The unique identifier for a scheduling coordinator (SC).</td>
<td>String</td>
<td>Yes</td>
</tr>
<tr>
<td>resourceList</td>
<td>The unique identifier for a resource.</td>
<td>String</td>
<td>No</td>
</tr>
</tbody>
</table>
## 15.3 ISO Commitment Cost Details Response

### 15.3.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Message Header</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Message Payload</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>resource</td>
<td>The unique identifier for a resource.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>configuration</td>
<td>The unique identifier for a configuration of an MSG (multi-stage generator) resource. This element will be populated when the transaction applies to an MSG resource; otherwise this element will not be included in the output payload.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Scheduling Coordinator</td>
<td>The unique identifier for a scheduling coordinator (SC).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>tradeDate</td>
<td>The trade day to which the current record pertains (in California Prevailing Time).</td>
<td>date</td>
<td>No</td>
</tr>
<tr>
<td>intervalDuration</td>
<td>The duration of an interval in minutes (in California Prevailing Time).</td>
<td>integer</td>
<td>No</td>
</tr>
<tr>
<td>HR</td>
<td>The hour of the trade day to which the current record pertains (in California Prevailing Time).</td>
<td>integer</td>
<td>No</td>
</tr>
<tr>
<td>intervalNum</td>
<td>The interval number. An interval represents a specific part of a trade hour to which the current record pertains. A trade hour may comprise of one or more intervals, of equal duration, based on the interval duration. For example, if the interval duration is 10 minutes, the trade hour will comprise of six intervals.</td>
<td>integer</td>
<td>No</td>
</tr>
<tr>
<td>intervalStartTime</td>
<td>Start time of the market interval</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>intervalEndTime</td>
<td>End time of the market interval</td>
<td>dateTime</td>
<td>No</td>
</tr>
<tr>
<td>marketType</td>
<td>Market Type will be RTM for Real Time, RUC or IFM</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>StartUpCost</td>
<td>Start Up Cost for the Resource</td>
<td>float</td>
<td>No</td>
</tr>
<tr>
<td>StartUpCostEligibility Flag</td>
<td>Eligibility Flag for the Start Up Cost</td>
<td>float</td>
<td>No</td>
</tr>
<tr>
<td>ShutDownCost</td>
<td>Pump Shut Down Cost for the Resource</td>
<td>float</td>
<td>No</td>
</tr>
<tr>
<td>Element</td>
<td>Data Description</td>
<td>Type</td>
<td>Req’d</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>---------</td>
<td>-------</td>
</tr>
<tr>
<td>ShutDownCostEligibilityFlag</td>
<td>Eligibility Flag for the Pump Shut Down Cost</td>
<td>String</td>
<td>No</td>
</tr>
<tr>
<td>NoLoadCost (aka Minimum Load Cost)</td>
<td>Minimum Load Cost for the Resoruce</td>
<td>float</td>
<td>No</td>
</tr>
<tr>
<td>NoLoadCostEligibilityFlag</td>
<td>Eligibility Flag for the Minimum Load</td>
<td>String</td>
<td>No</td>
</tr>
<tr>
<td>PumpingCost</td>
<td>Pump Shut Down Cost for the Resource</td>
<td>String</td>
<td>No</td>
</tr>
<tr>
<td>PumpingCostEligibilityFlag</td>
<td>Eligibility Flag for the Pump Shut Down Cost</td>
<td>String</td>
<td>No</td>
</tr>
<tr>
<td>RMRCommitmentFlag</td>
<td>Eligibility Flag for the RMR Commitment</td>
<td>String</td>
<td>No</td>
</tr>
<tr>
<td>transitionCost</td>
<td>This is the bid cost recovery eligible transition cost for the multi-stage generator (MSG) resource</td>
<td>float</td>
<td>No</td>
</tr>
<tr>
<td>transitionCostEligibilityFlag</td>
<td>This is the eligibility flag for the Transition Cost</td>
<td>String</td>
<td>No</td>
</tr>
<tr>
<td>adjStartUpNotificationPeriod</td>
<td>Startup Time Period; Number of minutes; Notification time is the time from when resource gets notified of StartUp till it gets synchronized to grid (reach Pmin); ramping time included. 15 minute adder is included to account for possible rounding by the RTUC commitment process.</td>
<td>integer</td>
<td>No</td>
</tr>
<tr>
<td>adjTransitionNotificationPeriod</td>
<td>Transition Time Period; Number of minutes; Notification time is the time from when resource gets notified of Transition till it gets synchronized to grid (reach Pmin of To-Config); ramping time included. 15 minute adder is included to account for possible rounding by the RTUC commitment process.</td>
<td>integer</td>
<td>No</td>
</tr>
</tbody>
</table>
16 Retrieve Market Awards

16.1 Operation Details
The service has one operation with three message types. All input and output messages are in XML format.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Message Types</th>
<th>Message</th>
<th>WSDL</th>
<th>XSD</th>
</tr>
</thead>
<tbody>
<tr>
<td>retrieveMarketAwards</td>
<td>Input</td>
<td>retrieveMarketAwardsRequest</td>
<td>retrieveMarketAwards_v2.wsdl</td>
<td>RequestMarketAwards_v2.xsd</td>
</tr>
<tr>
<td></td>
<td></td>
<td>retrieveMarketAwards_DocAttachRequest</td>
<td>retrieveMarketAwards_v2_DocAttach.wsdl</td>
<td>MarketAwards_v2.xsd</td>
</tr>
<tr>
<td></td>
<td>Output</td>
<td>retrieveMarketAwardsResponse</td>
<td>retrieveMarketAwards_v2.wsdl</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>retrieveMarketAwards_DocAttachResponse</td>
<td>MarketAwards_v2.xsd</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fault</td>
<td>faultReturnType</td>
<td></td>
<td>StandardOutput.xsd</td>
</tr>
</tbody>
</table>

16.2 Market Awards Request

16.2.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req'd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message Header (optional)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
</tbody>
</table>

<p>| Message Payload | | |
|-----------------|-------------------|-----------------|-------|
| dateTimeStart   | Starting DateTime of the time period for which the data is requested.           | dateTime | Yes   |
| dateTimeEnd     | Ending DateTime of the time period for which the data is requested. Maximum of 31 days can be included in this report. | dateTime | Yes   |
| marketType      | The identifier for the higher-level market type. Valid values are DAM (for day ahead market), and RTM (corresponding to the HASP or RTUC execution-type's). | string | Yes   |</p>
<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td>executionType</td>
<td>The identifier for the execution or lower level market run process. Valid combination values:</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>- marketType: executionType</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- DAM: IFM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- RTM: HASP</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- RTM: RTUC (RTPD/15-min)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scheduling CoordinatorList</td>
<td>The unique identifier for a scheduling coordinator (SC).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>resourceTypeList</td>
<td>The type of resource. Valid values are GEN (for a generating resource), LOAD (for a load resource) and ITIE (for an intertie resource).</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>resourceSubTypeList</td>
<td>A further classification of a resource. Valid values are PL (for participating load), NPL (for non-participating load), GEN (for generator), PUMP (for pump-storage generators), ITIE_I (for Import Intertie), ITIE_E (for Export Intertie), SYNC (for sync condenser).</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>ProductList</td>
<td>The product associated with the current record. Valid values are EN (for energy), RU (for Reg Up), RD (for Reg Down), SR (for Spinning Reserve), NR (for Non-spinning Reserve), RC_CAP (for RUC Capacity), RC_AWD (for RUC Award), LFU (for Load Following Up Capacity), LF_D (for Load Following Down Capacity), RMU (for Regulation Up Mileage), RMD (for Regulation Down Mileage)</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>ScheduleTypeList</td>
<td>Indicates whether the award was from the CAISO market or self-provided. Valid values are MARKET (for CAISO award) and SELF (for self-provided).</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>ContractTypeList</td>
<td>This field will not be populated.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>LocationList</td>
<td>Unique identifier for either the LAP (for Load Aggregation Point) or pnode (for Price Node).</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>SchedulingPointList</td>
<td>Unique identifier of the scheduling point.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>DirectionList</td>
<td>This element indicates the flow of energy/capacity in or out of the CAISO Control Area. Valid values are I (for Import) and E (for Export).</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>ResourceList</td>
<td>The unique identifier for a resource.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>energyTypeList</td>
<td>The energy type for the schedule. Valid values are FIRM (for Firm energy), NFIRM (for Non-Firm energy), DYN (for Dynamic Interchange), WHL (for Wheeling), and UNT_CNTG (for Unit Contingent).</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>bindingFlagList</td>
<td>Indicates if the schedule is binding. Valid values are Y (for Yes) and N (for No).</td>
<td>string</td>
<td>No</td>
</tr>
</tbody>
</table>
## 16.3 Market Awards Response

### 16.3.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Message Header</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Message Payload</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>resource</td>
<td>The unique identifier for a resource.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>resourceType</td>
<td>The type of resource. Valid values are GEN (for a generating resource), LOAD (for a load resource) and ITIE (for an intertie resource).</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>resourceSubType</td>
<td>A further classification of a resource. Valid values are PL (for participating load), NPL (for non-participating load), GEN (for generator), PUMP (for pump-storage generators), ITIE_I (for Import Intertie), ITIE_E (for Export Intertie), SYNC (for sync condenser).</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>configuration</td>
<td>The unique identifier for a configuration of an MSG (multi-stage generator) resource. This element will be populated when the transaction applies to an MSG resource; otherwise this element will not be included in the output payload.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>Scheduling Coordinator</td>
<td>The unique identifier for a scheduling coordinator (SC).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>marketType</td>
<td>The identifier for the higher-level market type. Valid values are DAM (for day ahead market), and RTM (corresponding to the HASP or RTUC execution-type’s).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>executionType</td>
<td>The identifier for the execution or lower level market run process. Valid combination values:</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td><strong>marketType</strong></td>
<td><strong>executionType</strong></td>
<td></td>
</tr>
<tr>
<td>DAM</td>
<td>IFM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RTM</td>
<td>HASP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RTM</td>
<td>RTUC (RTPD/15-min)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Element</td>
<td>Data Description</td>
<td>Type</td>
<td>Req’d</td>
</tr>
<tr>
<td>----------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>----------</td>
<td>-------</td>
</tr>
<tr>
<td>tradeDate</td>
<td>The trade day to which the current record pertains (in California Prevailing Time).</td>
<td>date</td>
<td>No</td>
</tr>
<tr>
<td>intervalDuration</td>
<td>The duration of an interval in minutes (in California Prevailing Time).</td>
<td>integer</td>
<td>No</td>
</tr>
<tr>
<td>product</td>
<td>The product associated with the current record. Valid values are EN (for energy), RU (for Reg Up), RD (for Reg Down), SR (for Spinning Reserve), NR (for Non-spinning Reserve), RC_CAP (for RUC Capacity), RC_AWD (for RUC Award), LFU (for Load Following Up Capacity), LFD (for Load Following Down Capacity), RMU (for Regulation Up Mileage), RMD (for Regulation Down Mileage)</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>scheduleType</td>
<td>Indicates whether the award was from the CAISO market or self-provided. Valid values are MARKET (for CAISO award) and SELF (for self-provided).</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>contractType</td>
<td>This field will not be populated.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>location</td>
<td>Unique identifier for either the LAP (Load Aggregation Point) or pnode (Price Node).</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>SchedulingPoint</td>
<td>Unique identifier of the scheduling point.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>energyType</td>
<td>The energy type for the schedule. Valid values are FIRM (for Firm energy), NFIRM (for Non-Firm energy), DYN (for Dynamic Interchange), WHL (for Wheeling), and UNT_CNTG (for Unit Contingent).</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>ASRegion</td>
<td>The unique identifier for the Ancillary Services Region (AS Region) the resource belongs to.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>direction</td>
<td>This element indicates the flow of energy/capacity in or out of the CAISO Control Area. Valid values are I (for Import) and E (for Export).</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>bindingFlag</td>
<td>Indicates if the schedule is binding. Valid values are Y (for Yes) and N (for No).</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>HR</td>
<td>The hour of the trade day to which the current record pertains (in California Prevailing Time).</td>
<td>integer</td>
<td>No</td>
</tr>
<tr>
<td>intervalNum</td>
<td>The interval number. An interval represents a specific part of a trade hour to which the current record pertains. A trade hour may comprise of one or more intervals, of equal duration, based on the interval duration. For example, if the interval duration is 60 minutes, the trade hour will comprise of only one interval of 60 minutes. If, on the other hand, the interval duration is 15 minutes, the trade hour will comprise of four intervals of 15 minutes each. The intervals are numbered sequentially starting with the earliest one numbered 1.</td>
<td>integer</td>
<td>No</td>
</tr>
<tr>
<td>intervalStartTime</td>
<td>Start time of the market interval</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>intervalEndTime</td>
<td>End time of the market interval</td>
<td>dateTime</td>
<td>No</td>
</tr>
<tr>
<td>MW</td>
<td>Scheduled MW for the current record.</td>
<td>float</td>
<td>Yes</td>
</tr>
</tbody>
</table>
17 Retrieve MPM Results

17.1 Operation Details
The service has one operation with three message types. All input and output messages are in XML format.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Message Types</th>
<th>Message Types</th>
<th>WSDL</th>
<th>XSD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retrieve MPM Results</td>
<td>Input</td>
<td>retrieveMPMResultsRequest</td>
<td>retrieveMPMResults_v2.wsdl</td>
<td>RequestMPMResults_v2.xsd</td>
</tr>
<tr>
<td></td>
<td></td>
<td>retrieveMPMResults_DocAttachRequest</td>
<td>retrieveMPMResults_v2_DocAttach.wsdl</td>
<td>MPMResults_v2.xsd</td>
</tr>
<tr>
<td></td>
<td>Output</td>
<td>retrieveMPMResultsResponse</td>
<td>RequestMPMResults_v2.xsd</td>
<td>MPMResults_v2.xsd</td>
</tr>
<tr>
<td></td>
<td></td>
<td>retrieveMPMResults_DocAttachResponse</td>
<td>MPMResults_v2.xsd</td>
<td>MPMResults_v2.xsd</td>
</tr>
<tr>
<td>Fault</td>
<td></td>
<td>faultReturnType</td>
<td>MPMResults_v2.xsd</td>
<td>StandardOutput.xsd</td>
</tr>
</tbody>
</table>

17.2 MPM Results Request

17.2.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req'd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message Header (optional)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Message Payload

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req'd</th>
</tr>
</thead>
<tbody>
<tr>
<td>dateTimeStart</td>
<td>Starting DateTime of the time period for which the data is requested.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>dateTimeEnd</td>
<td>Ending DateTime of the time period for which the data is requested.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>marketType</td>
<td>The identifier for the market type. Valid values are DAM (for day ahead market), and RTM (corresponding to the HASP or RTUC execution-type’s).</td>
<td>String</td>
<td>Yes</td>
</tr>
<tr>
<td>Element</td>
<td>Data Description</td>
<td>Type</td>
<td>Req’d</td>
</tr>
<tr>
<td>-------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>--------</td>
<td>-------</td>
</tr>
<tr>
<td>elementType</td>
<td>The identifier for the execution or lower level market run process. Valid combination values:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>marketType</strong> <strong>elementType</strong></td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>DAM</td>
<td>IFM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RTM</td>
<td>HASP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RTM</td>
<td>RTUC (RTPD/15-min)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>coordinationList</td>
<td>The unique identifier for a scheduling coordinator (SC).</td>
<td>String</td>
<td>Yes</td>
</tr>
<tr>
<td>resourceList</td>
<td>The unique identifier for a resource.</td>
<td>String</td>
<td>No</td>
</tr>
</tbody>
</table>

### 17.3 MPM Results Response

#### 17.3.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Message Header</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Message Payload</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>resource</td>
<td>The unique identifier for a resource.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>resourceType</td>
<td>The type of resource. Valid values are GEN (for a generating resource), LOAD (for a load resource) and ITIE (for an intertie resource).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>configuration</td>
<td>The unique identifier for a configuration of an MSG (multi-stage generator) resource. This element will be populated when the transaction applies to an MSG resource; otherwise this element will not be included in the output payload.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>coordination</td>
<td>The unique identifier for a scheduling coordinator (SC).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Element</td>
<td>Data Description</td>
<td>Type</td>
<td>Req’d</td>
</tr>
<tr>
<td>------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>--------</td>
<td>-------</td>
</tr>
<tr>
<td>marketType</td>
<td>The identifier for the market type. Valid values are DAM (for day ahead market), and RTM (corresponding to the HASP or RTUC execution-type’s).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>executionType</td>
<td>The identifier for the execution or lower level market run process. Valid combination values:</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td><strong>marketType</strong></td>
<td><strong>executionType</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DAM</td>
<td>IFM</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RTM</td>
<td>HASP</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RTM</td>
<td>RTUC (RTPD/15-min)</td>
<td></td>
</tr>
<tr>
<td>tradeDate</td>
<td>The trade day to which the current record pertains (in California Prevailing Time).</td>
<td>date</td>
<td>No</td>
</tr>
<tr>
<td>HR</td>
<td>The trade hour for which the bid has been mitigated (in California Prevailing Time).</td>
<td>integer</td>
<td>No</td>
</tr>
<tr>
<td>intervalNum</td>
<td>The interval number. An interval represents a specific part of a trade hour to which the current record pertains. A trade hour may comprise of one or more intervals, of equal duration, based on the interval duration. For example, if the interval duration is 60 minutes, the trade hour will comprise of only one interval of 60 minutes. If, on the other hand, the interval duration is 15 minutes, the trade hour will comprise of four intervals of 15 minutes each. The intervals are numbered sequentially starting with the earliest one numbered 1.</td>
<td>integer</td>
<td>Yes</td>
</tr>
<tr>
<td>intervalStartTime</td>
<td>Start time of the market interval</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>intervalEndTime</td>
<td>End time of the market interval</td>
<td>dateTime</td>
<td>No</td>
</tr>
<tr>
<td>segmentNum</td>
<td>The segment number for the bid price curve.</td>
<td>integer</td>
<td>Yes</td>
</tr>
<tr>
<td>MW</td>
<td>The MW value for the specified segment of the bid price curve.</td>
<td>float</td>
<td>Yes</td>
</tr>
<tr>
<td>price</td>
<td>The price ($ per MW) value for the specified segment of the bid price curve.</td>
<td>float</td>
<td>Yes</td>
</tr>
</tbody>
</table>
18 Retrieve RMR Dispatches

18.1 Operation Details

The service has one operation with three message types. All input and output messages are in XML format.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Message Types</th>
<th>Message</th>
<th>WSDL</th>
<th>XSD</th>
</tr>
</thead>
<tbody>
<tr>
<td>RetrieveRMRDispatches</td>
<td>Input</td>
<td>RetrieveRMRDispatchesRequest</td>
<td>RetrieveRMRDispatches_v1.wsdl</td>
<td>RequestRMRDispatches_v1.xsd</td>
</tr>
<tr>
<td></td>
<td></td>
<td>retrieveRMRDispatches_DocAttachRequest</td>
<td>retrieveRMRDispatches_v1_DocAttach.wsdl</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Output</td>
<td>RetrieveRMRDispatchesResponse</td>
<td>RMRDispatches_v1.xsd</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>retrieveRMRDispatches_DocAttachResponse</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fault</td>
<td>faultReturnType</td>
<td>StandardOutput.xsd</td>
<td></td>
</tr>
</tbody>
</table>

18.2 RMR Dispatches Request

18.2.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req'd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message Header (optional)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Message Payload</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dateTimeStart</td>
<td>Starting DateTime of the time period for which the data is requested.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>dateTimeEnd</td>
<td>Ending DateTime of the time period for which the data is requested. Maximum of 31 days can be included in this report.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>marketTypeList</td>
<td>The identifier for the market type. Valid value is DAM (for day ahead market).</td>
<td>String</td>
<td>Yes</td>
</tr>
<tr>
<td>schedulingCoordinatorList</td>
<td>The unique identifier for a scheduling coordinator (SC).</td>
<td>String</td>
<td>Yes</td>
</tr>
<tr>
<td>Element</td>
<td>Data Description</td>
<td>Type</td>
<td>Req’d</td>
</tr>
<tr>
<td>--------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>---------</td>
<td>-------</td>
</tr>
<tr>
<td>resourceList</td>
<td>The unique identifier for a resource.</td>
<td>String</td>
<td>No</td>
</tr>
</tbody>
</table>

## 18.3 RMR Dispatches Response

### 18.3.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message Header</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Message Payload</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>resource</td>
<td>The unique identifier for a resource.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Scheduling Coordinator</td>
<td>The unique identifier for a scheduling coordinator (SC).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>tradeDate</td>
<td>The trade day to which the current record pertains (in California Prevailing Time).</td>
<td>date</td>
<td>No</td>
</tr>
<tr>
<td>marketType</td>
<td>The identifier for the market type. Valid value is DAM (for day ahead market).</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>HR</td>
<td>The hour of the trade day to which the current record pertains (in California Prevailing Time).</td>
<td>integer</td>
<td>Yes</td>
</tr>
<tr>
<td>schedMW</td>
<td>Day-Ahead Energy Schedule cleared and scheduled through the IFM run, in MW unit</td>
<td>float</td>
<td>Yes</td>
</tr>
</tbody>
</table>
| RMRFlag               | RMR Flag indicating if the resource was dispatched under the RMR Contract. This will be set to ‘Yes’ when it was:  
  • Manually dispatched by an Operator; or  
  • Generated by the market run where the unit has an AC (All Constraints) schedule value greater than the CC (Competitive Constraint) schedule, even if the (IFM) Day-Ahead Schedule is zero.  
  Valid values are Y (for yes) and N (for no). | string | Yes   |
| intervalStartTime     | Start time of the market interval                                                | dateTime | Yes   |
| intervalEndTime       | End time of the market interval                                                  | dateTime | No    |
19 Retrieve Schedule Prices

19.1 Operation Details
The service has one operation with three message types. All input and output messages are in XML format.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Message Types</th>
<th>Message</th>
<th>WSDL</th>
<th>XSD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retrieve Schedule</td>
<td>Input</td>
<td>retrieveSchedulePricesRequest</td>
<td>RetrieveSchedulePrices_v2.wsdl</td>
<td>RequestSchedulePrices_v2.xsd</td>
</tr>
<tr>
<td>Prices</td>
<td></td>
<td>retrieveSchedulePrices_DocAttachRequest</td>
<td>RetrieveSchedulePrices_v2_DocAttach_response.wsdl</td>
<td>SchedulePrices_v2.xsd</td>
</tr>
<tr>
<td>Output</td>
<td></td>
<td>retrieveSchedulePricesResponse</td>
<td>RetrieveSchedulePrices_v2.wsdl</td>
<td>SchedulePrices_v2.xsd</td>
</tr>
<tr>
<td></td>
<td></td>
<td>retrieveSchedulePrices_DocAttachResponse</td>
<td>SchedulePrices_v2.xsd</td>
<td></td>
</tr>
<tr>
<td>Fault</td>
<td></td>
<td>faultReturnType</td>
<td>SchedulePrices_v2.xsd</td>
<td>StandardOutput.xsd</td>
</tr>
</tbody>
</table>

19.2 Schedule Prices Request

19.2.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message Header (optional)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Message Payload</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dateTimeStart</td>
<td>Starting DateTime of the time period for which the data is requested.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>dateTimeEnd</td>
<td>Ending DateTime of the time period for which the data is requested.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>marketType</td>
<td>The identifier for the market type. Valid values are DAM (for day ahead market), and RTM (corresponding to the HASP or RTUC execution-type’s).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Element</td>
<td>Data Description</td>
<td>Type</td>
<td>Req’d</td>
</tr>
<tr>
<td>-------------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>----------</td>
<td>-------</td>
</tr>
<tr>
<td>executionType</td>
<td>The identifier for the execution or lower level market run process. Valid combination values:</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>- <strong>marketType</strong> : <strong>executionType</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- DAM : IFM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- RTM : HASP</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- RTM : RTUC (RTPD/15-min)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scheduling CoordinatorList</td>
<td>The unique identifier for a scheduling coordinator (SC).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>resourceTypeList</td>
<td>The type of resource. Valid values are GEN (for a generating resource), LOAD (for a load resource) and ITIE (for an intertie resource).</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>resourceSubTypeList</td>
<td>A further classification of a resource. Valid values are PL (for participating load), NPL (for non-participating load), GEN (for generator), PUMP (for pump-storage generators), ITIE_I (for Import Intertie), ITIE_E (for Export Intertie), SYNC (for sync condenser).</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>ProductList</td>
<td>The product associated with the current record. Valid values are EN (for energy), RU (for Reg Up), RD (for Reg Down), SR (for Spinning Reserve), NR (for Non-spinning Reserve), RC (for RUC), RMU (for Regulation Up Mileage), RMD (for Regulation Down Mileage)</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>priceTypeList</td>
<td>This element represents the type of price on the current record. Valid values are LMP (for Locational Marginal Price; LMP = EN + LOSS + CONGESTION), ASMP (for Ancillary Service Marginal Price), EN (for Energy component of LMP price), LOSS (for Loss component of LMP price), CONGESTION (for Congestion component of LMP price), and RUC (for RUC price).</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>ResourceList</td>
<td>The unique identifier for a resource.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>schedulingPointList</td>
<td>Unique identifier of the scheduling point.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>DirectionList</td>
<td>This element indicates the flow of energy/capacity in or out of the CAISO Control Area. Valid values are I (for Import) and E (for Export).</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>energyTypeList</td>
<td>The energy type for the schedule. Valid values are FIRM (for Firm energy), NFIRM (for Non-Firm energy), DYN (for Dynamic Interchange), WHL (for Wheeling), and UNT_CNTG (for Unit Contingent).</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>bindingFlagList</td>
<td>Indicates if the schedule is binding. Valid values are Y (for Yes) and N (for No).</td>
<td>string</td>
<td>No</td>
</tr>
</tbody>
</table>
## 19.3 Schedule Prices Response

### 19.3.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Message Header</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Message Payload</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resource</td>
<td>The unique identifier for a resource.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>resourceType</td>
<td>The type of resource. Valid values are GEN (for a generating resource), LOAD (for a load resource) and ITIE (for an intertie resource).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>resourceSubType</td>
<td>A further classification of a resource. Valid values are PL (for participating load) , NPL (for non-participating load), GEN (for generator), PUMP (for pump-storage generators), ITIE_I (for Import Intertie), ITIE_E (for Export Intertie), SYNC (for sync condenser).</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>Scheduling Coordinator</td>
<td>The unique identifier for a scheduling coordinator (SC).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>marketType</td>
<td>The identifier for the market type. Valid values are DAM (for day ahead market), and RTM (corresponding to the HASP or RTUC execution-type’s).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>executionType</td>
<td>The identifier for the execution or lower level market run process. Valid combination values:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>marketType</strong></td>
<td><strong>executionType</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DAM</td>
<td>IFM</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RTM</td>
<td>HASP</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RTM</td>
<td>RTUC (RTPD/15-min)</td>
<td></td>
</tr>
<tr>
<td>tradeDate</td>
<td>The trade day to which the current record pertains (in California Prevailing Time).</td>
<td>date</td>
<td>No</td>
</tr>
<tr>
<td>intervalDuration</td>
<td>The duration of an interval in minutes.</td>
<td>integer</td>
<td>No</td>
</tr>
<tr>
<td>Product</td>
<td>The product associated with the current record. Valid values are EN (for energy), RU (for Reg Up), RD (for Reg Down), SR (for Spinning Reserve), NR (for Non-spinning Reserve), and RC (for RUC).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Element</td>
<td>Data Description</td>
<td>Type</td>
<td>Req’d</td>
</tr>
<tr>
<td>---------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>bindingFlag</td>
<td>Indicates if the schedule is binding. Valid values are Y (for Yes) and N (for No).</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>priceType</td>
<td>This element represents the type of price on the current record. Valid values are LMP (for Locational Marginal Price; LMP = EN + LOSS + CONGESTION), ASMP (for Ancillary Service Marginal Price), EN (for Energy component of LMP price), LOSS (for Loss component of LMP price), CONGESTION (for Congestion component of LMP price), and RUC (for RUC price).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>schedulingPoint</td>
<td>Unique identifier of the scheduling point.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>Direction</td>
<td>This element indicates the flow of energy/capacity in or out of the CAISO Control Area. Valid values are I (for Import) and E (for Export).</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>energyType</td>
<td>The energy type for the schedule. Valid values are FIRM (for Firm energy), NFIRM (for Non-Firm energy), DYN (for Dynamic Interchange), WHL (for Wheeling), and UNT_CNTG (for Unit Contingent).</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>HR</td>
<td>The hour of the trade day to which the current record pertains (in California Prevailing Time).</td>
<td>integer</td>
<td>No</td>
</tr>
<tr>
<td>intervalNum</td>
<td>The interval number. An interval represents a specific part of a trade hour to which the current record pertains. A trade hour may comprise of one or more intervals, of equal duration, based on the interval duration. For example, if the interval duration is 60 minutes, the trade hour will comprise of only one interval of 60 minutes. If, on the other hand, the interval duration is 15 minutes, the trade hour will comprise of four intervals of 15 minutes each. The intervals are numbered sequencially starting with the earliest one numbered 1.</td>
<td>integer</td>
<td>No</td>
</tr>
<tr>
<td>intervalStartTime</td>
<td>Start time of the market interval</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>intervalEndTime</td>
<td>End time of the market interval</td>
<td>dateTime</td>
<td>No</td>
</tr>
<tr>
<td>Price</td>
<td>This element represents the price associated with the current record.</td>
<td>float</td>
<td>Yes</td>
</tr>
</tbody>
</table>
20 Retrieve Start Up Shut Down Instructions

20.1 Operation Details
The service has one operation with three message types. All input and output messages are in XML format.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Message Types</th>
<th>Message</th>
<th>WSDL</th>
<th>XSD</th>
</tr>
</thead>
<tbody>
<tr>
<td>RetrieveStartUpShutDownInstruction</td>
<td>Input</td>
<td>RetrieveStartUpShutDownInstructionRequest retrieveStartUpShutDownInstructions_DocAttachRequest</td>
<td>RetrieveStartUpShutDownInstructions_v1.wsdld retrieveStartUpShutDownInstructions_v1_DocAttach.wsdl</td>
<td>RequestStartUpShutDownInstructions_v1.xsd</td>
</tr>
<tr>
<td></td>
<td>Output</td>
<td>RetrieveStartUpShutDownInstructionResponse retrieveStartUpShutDownInstructions_DocAttachResponse</td>
<td></td>
<td>StartUpShutDownInstructions_v1.xsd</td>
</tr>
<tr>
<td></td>
<td>Fault</td>
<td>faultReturnType</td>
<td></td>
<td>StandardOutput.xsd</td>
</tr>
</tbody>
</table>

20.2 Start Up Shut Down Instructions Request

20.2.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Message Header (optional)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
</tbody>
</table>

| **Message Payload** |                                                        |          |       |
| dateTimeStart      | Starting DateTime of the time period for which the data is requested. | dateTime | Yes   |
| dateTimeEnd        | Ending DateTime of the time period for which the data is requested. Maximum of 31 days can be included in this report. | dateTime | Yes   |
### 20.3 Start Up Shut Down Instructions Response

#### 20.3.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td>scheduling CoordinatorList</td>
<td>The unique identifier for a scheduling coordinator (SC).</td>
<td>String</td>
<td>Yes</td>
</tr>
<tr>
<td>resourceTypeList</td>
<td>The type of resource. Valid values are GEN (for a generating resource), LOAD (for a load resource) and ITIE (for an intertie resource).</td>
<td>String</td>
<td>No</td>
</tr>
<tr>
<td>instructionSourceList</td>
<td>This element represents the source where the instruction originated. The valid values are RUC (for Residual Unit Commitment process), and ELC (For Extremely Long Start Commitment process).</td>
<td>String</td>
<td>No</td>
</tr>
<tr>
<td>instructionTypeList</td>
<td>The type of instruction. Valid values are: STARTUP (for a start up instruction), TRANSITION (for a multi-stage generator or MSG transition instruction)</td>
<td>String</td>
<td>No</td>
</tr>
<tr>
<td>resourceList</td>
<td>The unique identifier for a resource.</td>
<td>String</td>
<td>No</td>
</tr>
<tr>
<td>operatingModeList</td>
<td>This element represents whether the unit is operating in generating or pumping mode. Valid values are GEN (for generating mode), and PUMP (for pumping mode).</td>
<td>String</td>
<td>No</td>
</tr>
<tr>
<td>resourceSubTypeList</td>
<td>A further classification of a resource. Valid values are PL (for participating load), NPL (for non-participating load), GEN (for generator), PUMP (for pump-storage generators), ITIE_I (for Import Intertie), ITIE_E (for Export Intertie), SYNC (for sync condenser).</td>
<td>String</td>
<td>No</td>
</tr>
<tr>
<td>Element</td>
<td>Data Description</td>
<td>Type</td>
<td>Req’d</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>--------</td>
<td>-------</td>
</tr>
<tr>
<td>resourceSubType</td>
<td>A further classification of a resource. Valid values are PL (for participating load), NPL (for non-participating load), GEN (for generator), PUMP (for pump-storage generators), ITIE_I (for Import Intertie), ITIE_E (for Export Intertie), SYNC (for sync condenser).</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>configuration</td>
<td>The unique identifier for a configuration of an MSG (multi-stage generator) resource. This element will only be populated when the record is a startup instruction of an MSG unit; otherwise this element will not be included in the output payload for transition instructions.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>transitionFromConfiguration</td>
<td>A transition connects two configurations. This element represents the starting configuration identifier of the transition for an MSG (multi-stage generator) resource. This element will be populated when the InstructionType of the record is a “Transition”; otherwise this element will not be included in the output payload.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>transitionToConfiguration</td>
<td>A transition connects two configurations. This element represents the ending configuration identifier of the transition for an MSG (multi-stage generator) resource. This element will be populated when the InstructionType of the record is a “Transition”; otherwise this element will not be included in the output payload.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>Scheduling Coordinator</td>
<td>The unique identifier for a scheduling coordinator (SC).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>tradeDate</td>
<td>The trade day to which the current record pertains (in California Prevailing Time).</td>
<td>date</td>
<td>No</td>
</tr>
<tr>
<td>instructionSource</td>
<td>This element represents the source where the instruction originated. The valid values are RUC (for Residual Unit Commitment process), and ELC (For Extremely Long Start Commitment process).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>instructionType</td>
<td>The type of instruction. Valid values are: STARTUP (for a startup instruction), TRANSITION (for a multi-stage generator or MSG transition instruction)</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>startTime</td>
<td>If the InstructionType of the record is:</td>
<td>dateTime</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>- &quot;Startup&quot;, then this element is the start date and time, in California Prevailing Time, when the unit should be online, i.e. expected to be at the Minimum Load Level;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- &quot;Transition&quot;, then this element is the (start) date and time, in California Prevailing Time, when the multi-stage generator (MSG) unit should start its transitioning process.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Element</td>
<td>Data Description</td>
<td>Type</td>
<td>Req’d</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------</td>
<td>-------</td>
</tr>
</tbody>
</table>
| endTime            | If the instructionType of the record is:  
|                    | • “Startup”, then this element’s data value is NULL;  
|                    | • “Transition”, then this element is the (end) date and time, in California Prevailing Time, when the multi-stage generator (MSG) unit should complete its transitioning process. | dateTime| No    |
| bindingFlag        | A flag to indicate if the instruction is binding  
|                    | NOTE: Startup instructions from RUC or the ELC process will always be binding.                                                                                                                                  | string  | Yes   |
| instructionCost    | The cost associated with the instruction.                                                                                                                                                                         | float   | Yes   |
| operatingMode      | This element represents whether the unit is operating in generating or pumping mode. Valid values are GEN (for generating mode), and PUMP (for pumping mode).                                                     | string  | No    |
| startTime_GMT      | If the instructionType of the record is:  
|                    | • “Startup”, then this element is the start date and time, in Greenwich Mean Time (GMT), when the unit should be online, i.e. expected to be at the Minimum Load Level;  
|                    | • “Transition”, then this element is the (start) date and time, in Greenwich Mean Time (GMT), when the multi-stage generator (MSG) unit should start its transitioning process. | dateTime| Yes   |
| endTime_GMT        | If the instructionType of the record is:  
|                    | • “Startup”, then this element’s data value is NULL;  
|                    | • “Transition”, then this element is the (end) date and time, in Greenwich Mean Time (GMT), when the multi-stage generator (MSG) unit should complete its transitioning process. | dateTime| No    |
21 Retrieve Two Day Ahead MSSA Load Forecast

21.1 Operation Details
The service has one operation with three message types. All input and output messages are in XML format.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Message Types</th>
<th>Message</th>
<th>WSDL</th>
<th>XSD</th>
</tr>
</thead>
<tbody>
<tr>
<td>retrieveTwoDayMSSALoadForecast</td>
<td>Input</td>
<td>RetrieveTwoDayMSSALoadForecastRequest</td>
<td>retrieveTwoDayMSSALoadForecast_v1.wsdl</td>
<td>RequestsTwoDayMSSALoadForecast_v1.xsd</td>
</tr>
<tr>
<td></td>
<td>AttachRequest</td>
<td>retrieveTwoDayMSSALoadForecast_DocAttachRequest</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Output</td>
<td>RetrieveTwoDayMSSALoadForecastResponse</td>
<td>retrieveTwoDayMSSALoadForecast_v1_DocAttach.wsdl</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fault</td>
<td>faultReturnType</td>
<td></td>
<td>TwoDayMSSALoadForecast_v1.xsd</td>
</tr>
</tbody>
</table>

21.2 Two Day MSSA Load Forecast Request

21.2.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req'd</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Message Header (optional)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Message Payload</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dateTimeStart</td>
<td>Starting DateTime of the time period for which the data is requested.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>dateTimeEnd</td>
<td>Ending DateTime of the time period for which the data is requested. Maximum of 31 days can be included in this report.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>schedulingCoordinatorList</td>
<td>The unique identifier for a scheduling coordinator (SC).</td>
<td>string</td>
<td>Yes</td>
</tr>
</tbody>
</table>
21.3 Two Day MSSA Load Forecast Response

21.3.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Message Header</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Message Payload</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scheduling Coordinator</td>
<td>The unique identifier for a scheduling coordinator (SC).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>MSSZone</td>
<td>A geographically contiguous system located within a single zone which has been operating as electric utility for a number of years prior to the CAISO Operations Date as a municipal utility, water district, irrigation district, state agency or federal power marketing authority.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>tradeDate</td>
<td>The trade day to which the current record pertains (in California Prevailing Time).</td>
<td>date</td>
<td>No</td>
</tr>
<tr>
<td>HR</td>
<td>The hour of the trade day to which the current record pertains (in California Prevailing Time).</td>
<td>integer</td>
<td>No</td>
</tr>
<tr>
<td>intervalStartTime</td>
<td>Start time of the market interval</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>intervalEndTime</td>
<td>End time of the market interval</td>
<td>dateTime</td>
<td>No</td>
</tr>
<tr>
<td>MW</td>
<td>MW for the TradeHourData</td>
<td>float</td>
<td>Yes</td>
</tr>
</tbody>
</table>
22 Retrieve Unit Commitments

22.1 Operation Details

The service has one operation with three message types. All input and output messages are in XML format.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Message Types</th>
<th>Message</th>
<th>WSDL</th>
<th>XSD</th>
</tr>
</thead>
<tbody>
<tr>
<td>RetrieveUnitCommitments</td>
<td>Input</td>
<td>RetrieveUnitCommitmentsRequest retrieveUnitCommitments_DocAttachRequest</td>
<td>retrieveUnitCommitments_v1.wsdl retrieveUnitCommitments_v1_DocAttach.wsdl</td>
<td>RequestUnitCommitments_v1.xsd</td>
</tr>
<tr>
<td></td>
<td>Output</td>
<td>RetrieveUnitCommitmentsResponse retrieveUnitCommitments_DocAttachResponse</td>
<td>UnitCommitments_v1.xsd</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fault</td>
<td>FaultReturn</td>
<td></td>
<td>StandardOutput.xsd</td>
</tr>
</tbody>
</table>

22.2 Unit Commitments Request

22.2.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message Header (optional)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Message Payload</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>dateTimeStart</td>
<td>Starting DateTime of the time period for which the data is requested.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>dateTimeEnd</td>
<td>Ending DateTime of the time period for which the data is requested. Maximum of 31 days can be included in this report.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>scheduling CoordinatorList</td>
<td>The unique identifier for a scheduling coordinator (SC).</td>
<td>String</td>
<td>Yes</td>
</tr>
<tr>
<td>Element</td>
<td>Data Description</td>
<td>Type</td>
<td>Req’d</td>
</tr>
<tr>
<td>------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>--------</td>
<td>-------</td>
</tr>
<tr>
<td>resourceTypeList</td>
<td>The type of resource. Valid values are GEN (for a generating resource), LOAD (for a load resource) and ITIE (for an intertie resource).</td>
<td>String</td>
<td>No</td>
</tr>
<tr>
<td>resourceSubTypeList</td>
<td>A further classification of a resource. Valid values are PL (for participating load), NPL (for non-participating load), GEN (for generator), PUMP (for pump-storage generators), ITIE_I (for Import Intertie), ITIE_E (for Export Intertie), SYNC (for sync condenser).</td>
<td>String</td>
<td>No</td>
</tr>
<tr>
<td>operatingModeList</td>
<td>This element represents whether the unit is operating in generating or pumping mode. Valid values are GEN (for generating mode), and PUMP (for pumping mode).</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>commitmentTypeList</td>
<td>This element represents the source where the commitment originated. For the purpose of this report, a commitment can be self commitment or can originate from the market. When the commitment is originated from the market, it can be originated by either the IFM process or the RUC process of the market. Valid values are SELF (for self commitment), IFM (for IFM process of market), and RUC (for RUC process of market).</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>resourceList</td>
<td>The unique identifier for a resource.</td>
<td>string</td>
<td>No</td>
</tr>
</tbody>
</table>

### 22.3 Unit Commitments Response

#### 22.3.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message Header</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Message Payload</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>resource</td>
<td>The unique identifier for a resource.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>resourceType</td>
<td>The type of resource. Valid values are GEN (for a generating resource), LOAD (for a load resource) and ITIE (for an intertie resource).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Element</td>
<td>Data Description</td>
<td>Type</td>
<td>Req’d</td>
</tr>
<tr>
<td>----------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>configuration</td>
<td>The unique identifier for a configuration of an MSG (multi-stage generator) resource. This element will be populated when the transaction applies to an MSG resource; otherwise this element will not be included in the output payload.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>scheduling Coordinator</td>
<td>The unique identifier for a scheduling coordinator (SC).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>marketType</td>
<td>The identifier for the market type. Valid values are DAM (for day ahead market), and RTM (for the HASP reports).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>tradeDate</td>
<td>The trade day to which the current record pertains (in California Prevailing Time).</td>
<td>date</td>
<td>No</td>
</tr>
<tr>
<td>resourceSubType</td>
<td>A further classification of a resource. Valid values are PL (for participating load), NPL (for non-participating load), GEN (for generator), PUMP (for pump-storage generators), ITIE_I (for Import Intertie), ITIE_E (for Export Intertie), SYNC (for sync condenser).</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>operatingMode</td>
<td>This element represents whether the unit is operating in generating or pumping mode. Valid values are GEN (for generating mode), and PUMP (for pumping mode).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>commitmentType</td>
<td>This element represents the source where the commitment originated. For the purpose of this report, a commitment can be self commitment or can originate from the market. When the commitment is originated from the market, it can be originated by either the IFM process or the RUC process of the market. Valid values are SELF (for self commitment), IFM (for IFM process of market), and RUC (for RUC process of market).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>startTime</td>
<td>The start date and time, in California Prevailing Time, of the commitment.</td>
<td>dateTime</td>
<td>No</td>
</tr>
<tr>
<td>endTime</td>
<td>The end date and time, in California Prevailing Time, of the commitment.</td>
<td>dateTime</td>
<td>No</td>
</tr>
<tr>
<td>startTime_GMT</td>
<td>The start date and time, in Greenwich Mean Time (GMT), of the commitment.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>endTime_GMT</td>
<td>The end date and time, in Greenwich Mean Time (GMT), of the commitment.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
</tbody>
</table>
23 Retrieve Non Dispatchable Time Ranges

23.1 Operation Details

The service has one operation with three message types. All input and output messages are in XML format.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Message Types</th>
<th>Message Type</th>
<th>WSDL</th>
<th>XSD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retrieve NonDispatchable TimeRanges</td>
<td>Input</td>
<td>retrieveNonDispatchableTimeRangesRequest</td>
<td>retrieveNonDispatchableTimeRanges_v1.wsdl</td>
<td>Request NonDispatchableTimeRanges_v1.xsd</td>
</tr>
<tr>
<td></td>
<td></td>
<td>retrieveNonDispatchableTimeRanges_DocAttachRequest</td>
<td>retrieveNonDispatchableTimeRanges_v1_DocAttach.wsdl</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Output</td>
<td>retrieveNonDispatchableTimeRangesResponse</td>
<td>retrieveNonDispatchableTimeRanges_v1.xsd</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>retrieveNonDispatchableTimeRanges_DocAttachResponse</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fault</td>
<td>faultReturnType</td>
<td></td>
<td>StandardOutput.xsd</td>
</tr>
</tbody>
</table>

23.2 Non Dispatchable Time Ranges Request

23.2.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message Header (optional)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Message Payload</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dateTimeStart</td>
<td>Starting DateTime of the time period for which the data is requested.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>dateTimeEnd</td>
<td>Ending DateTime of the time period for which the data is requested. Maximum of 31 days can be included in this report.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>scheduling Coordinator</td>
<td>The unique identifier for a scheduling coordinator (SC). At least one SCID is required.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Element</td>
<td>Data Description</td>
<td>Type</td>
<td>Req’d</td>
</tr>
<tr>
<td>---------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>--------</td>
<td>-------</td>
</tr>
<tr>
<td>resource</td>
<td>The unique identifier for a resource.</td>
<td>string</td>
<td>No</td>
</tr>
</tbody>
</table>

### 23.3 Non Dispatchable Time Ranges Response

#### 23.3.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Message Header</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Message Payload</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>resource</td>
<td>The unique identifier for a resource.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>scheduling Coordinator</td>
<td>The unique identifier for a scheduling coordinator (SC).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>startTime</td>
<td>The start time of the startup ramp/transition ramp time periods, forbidden region time periods, or DOP correction; provided in Pacific time</td>
<td>dateTime</td>
<td>No</td>
</tr>
<tr>
<td>endTime</td>
<td>The end time of the startup ramp/transition ramp time periods, forbidden region time periods, or DOP correction; provided in Pacific time</td>
<td>dateTime</td>
<td>No</td>
</tr>
<tr>
<td>startTime_GMT</td>
<td>The start time of the startup ramp/transition ramp time periods, forbidden region time periods, or DOP correction; provided in Greenwich Mean Time (GMT) time</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>endTime_GMT</td>
<td>The end time of the startup ramp/transition ramp time periods, forbidden region time periods, or DOP correction; provided in Greenwich Mean Time (GMT) time</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>fromConfiguration</td>
<td>This element represents the starting configuration identifier of the transition for an MSG (multi-stage generator) resource. This element will be populated when the “nonDispatchableType” of the record is a “Transition” (“TRANS”)</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>Element</td>
<td>Data Description</td>
<td>Type</td>
<td>Req’d</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>toConfiguration</td>
<td>If the “nonDispatchableType” is a Startup (“SU”), this represents the configuration ID of the MSG resource. If the “nonDispatchableType” is a Transition (“TRANS”), this element represents the ending configuration identifier of the transition for an MSG (multi-stage generator) resource.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>nonDispatchableType</td>
<td>This element identifies the type of time period in which a unit is moving up or down but cannot be dispatched. Valid values: SU - for the resource Startup ramp time TRANS – for the MSG resource Transition ramp time FOR – for Forbidden Region; where the unit DOPs are within the forbidden region. DOP – for Dispatch Operating Point; where a DOP correction is performed due to verbal dispatch</td>
<td>string</td>
<td>Yes</td>
</tr>
</tbody>
</table>
### 24 Retrieve Market Schedules

#### 24.1 Operation Details

The service has one operation with three message types. All input and output messages are in XML format.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Message Types</th>
<th>Message</th>
<th>WSDL</th>
<th>XSD</th>
</tr>
</thead>
<tbody>
<tr>
<td>retrieveMarket Schedules</td>
<td>Input</td>
<td>retrieveMarket SchedulesRequest</td>
<td>retrieveMarket Schedules_v1.wsdl</td>
<td>RequestMarket Schedules_v1.xsd</td>
</tr>
<tr>
<td></td>
<td></td>
<td>retrieveMarket Schedules_DocAttachRequest</td>
<td>retrieveMarket Schedules_v1_DocAttach.wsdl</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Output</td>
<td>retrieveMarket SchedulesResponse</td>
<td>retrieveMarket Schedules_v1.wsdl</td>
<td>Market Schedules_v1.xsd</td>
</tr>
<tr>
<td></td>
<td></td>
<td>retrieveMarket Schedules_DocAttachResponse</td>
<td>retrievesMarket Schedules_v1_DocAttach.wsdl</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fault</td>
<td>faultReturnType</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 24.2 Market Schedules Request

##### 24.2.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message Header (optional)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td></td>
</tr>
</tbody>
</table>

**Message Payload**

<p>| dateTimeEnd              | Ending DateTime of the time period for which the data is requested. Note: To request RTUC Advisory schedules, data ranging from n intervals up to a maximum of one day can be included in the report. | dateTime   | Yes   |
| dateTimeStart            | Starting DateTime of the time period for which the data is requested. | dateTime   |       |</p>
<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td>executionType</td>
<td>The type of process executed under the market run. Valid combination values:</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td><strong>marketType</strong></td>
<td><strong>executionType</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DAM</td>
<td>IFM</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RTM</td>
<td>HASP</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RTM</td>
<td>RTUC (RTPD/15-min)</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Per Spring 2014 release, only RTM - RTPD or RTUC advisory data results will be available under this service; thus only the executionType value “RTUC” will be applicable when submitting requests.

| marketType       | The identifier for the market run. Valid values are DAM (for day ahead market), and RTM (for real-time market; corresponding to the HASP or RTUC execution-types). | string| Yes   |

**Note:** Per Spring 2014 release, only RTM - RTPD or RTUC advisory data results will be available under this service; thus only the marketType value “RTM” will be applicable when submitting requests.

| bindingFlag      | Indicates if the schedule is binding. Valid values are Y (for Yes) and N (for No or Advisory). | string| No    |

**Note:** Per Spring 2014 release, only RTPD or RTUC advisory data results i.e “bindingFlag=N” will be available.

| product          | The product associated with the current record. Valid values are EN (for energy), RU (for Reg Up), RD (for Reg Down), SR (for Spinning Reserve), NR (for Non-spinning Reserve), RC_CAP (for RUC Capacity), RC_AWD (for RUC Award), LFU (for Load Following Up Capacity), LFD (for Load Following Down Capacity), RMU (for Regulation Up Mileage), RMD (for Regulation Down Mileage) | string| No    |

| resource         | The unique identifier for a resource.                                                                 | string| No    |

| scheduleType     | Indicates whether the award was from the CAISO market or self-provided. Valid values are MARKET (for CAISO award) and SELF (for self-provided). | string| No    |

| scheduling Coordinator | The unique identifier for a scheduling coordinator (SC). At least one SCID is required. | string| Yes   |
### 24.3 Market Schedules Response

#### 24.3.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Message Header</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Message Payload</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| configuration | The unique identifier for a configuration of an MSG (multi-stage generator) resource.  
This element will be populated when the transaction applies to an MSG resource; otherwise this element will not be included in the output payload. | string | No   |
| executionType | The type of process executed under the market run.  
Valid combination values: | string | Yes  |
|              | *marketType* | *executionType* |       |       |
| DAM         | IFM                                                |       |       |
| RTM         | HASP                                               |       |       |
| RTM         | RTUC (RTPD/15-min)                                |       |       |

**Note:** Per Spring 2014 release, only RTPD or RTUC advisory data results will be available under this service; thus only the executionType value “RTUC” will exist in the output.

| marketType  | The identifier for the higher-level market type.  
Valid values are DAM (for day ahead market), and RTM (for real-time market; corresponding to the HASP or RTUC execution-types).  
**Note:** Per Spring 2014 release, only RTM - RTPD or RTUC advisory data results will be available under this service; thus only the marketType value “RTM” will exist in the output. | string | Yes  |
<p>| resource    | The unique identifier for a resource.                | string | Yes  |</p>
<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td>resourceSubType</td>
<td>A further classification of a resource. Valid values are PL (for participating load), NPL (for non-participating load), GEN (for generator), PUMP (for pump-storage generators), ITIE_I (for import Intertie), ITIE_E (for Export Intertie), SYNC (for sync condenser). <em>Note:</em> Per Spring 2014, this data element will not be provided for advisory schedules.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>resourceType</td>
<td>The type of resource. Valid values are GEN (for a generating resource), LOAD (for a load resource) and ITIE (for an intertie resource). <em>Note:</em> Per Spring 2014, this data element will not be provided for advisory schedules.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>scheduling Coordinator</td>
<td>The unique identifier for a scheduling coordinator (SC).</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>bindingFlag</td>
<td>Indicates if the schedule is binding. Valid values are Y (for Yes) and N (for No or Advisory). <em>Note:</em> Per Spring 2014 release, only RTPD or RTUC advisory data results i.e “bindingFlag= N” will be provided/available.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>contractType</td>
<td></td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>direction</td>
<td>This element indicates the flow of energy/capacity in or out of the CAISO Control Area. Valid values are I (for Import) and E (for Export). <em>Note:</em> Per Spring 2014, this data element will not be provided for advisory schedules.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>energyType</td>
<td>The energy type for the schedule. Valid values are FIRM (for Firm energy), NFIRM (for Non-Firm energy), DYN (for Dynamic Interchange), WHL (for Wheeling), and UNT_CNTG (for Unit Contingent). <em>Note:</em> Per Spring 2014, this data element will not be provided for advisory schedules.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>location</td>
<td>Unique identifier for either the LAP (Load Aggregation Point) or pnode (Price Node). <em>Note:</em> Per Spring 2014, this data element will not be provided for advisory schedules.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>marketEndTime</td>
<td>End time of the market horizon in Greenwich Mean Time (GMT)</td>
<td>datetime</td>
<td>No</td>
</tr>
<tr>
<td>marketEndTime_PPT</td>
<td>End time of the market horizon in Pacific Prevailing Time (PPT)</td>
<td>datetime</td>
<td>No</td>
</tr>
<tr>
<td>marketStartTime</td>
<td>Start time of the market horizon in Greenwich Mean Time (GMT)</td>
<td>datetime</td>
<td>No</td>
</tr>
<tr>
<td>Element</td>
<td>Data Description</td>
<td>Type</td>
<td>Req’d</td>
</tr>
<tr>
<td>----------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>------------</td>
<td>--------</td>
</tr>
<tr>
<td>marketStartTime_PP</td>
<td>Start time of the market horizon in Pacific Prevailing Time (PPT)</td>
<td>datetime</td>
<td>No</td>
</tr>
<tr>
<td>product</td>
<td>The product associated with the current record. Valid values are EN (for energy), RU (for Reg Up), RD (for Reg Down), SR (for Spinning Reserve), NR (for Non-spinning Reserve), RC_CAP (for RUC Capacity), RC_AWD (for RUC Award), LFU (for Load Following Up Capacity), LFD (for Load Following Down Capacity), RMU (for Regulation Up Mileage), RMD (for Regulation Down Mileage)</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>scheduleType</td>
<td>Indicates whether the award was from the CAISO market or self-provided. Valid values are MARKET (for CAISO award) and SELF (for self-provided).</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>ASRegion</td>
<td>The unique identifier for the Ancillary Services Region (AS Region) the resource belongs to.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>intervalStartTime</td>
<td>Start time of the interval within the market run in Greenwich Mean Time (GMT)</td>
<td>datetime</td>
<td>Yes</td>
</tr>
<tr>
<td>intervalEndTime</td>
<td>End time of the interval within the market run in Greenwich Mean Time (GMT)</td>
<td>datetime</td>
<td>No</td>
</tr>
<tr>
<td>intervalStartTime_PP</td>
<td>Start time of the interval within the market run in Pacific Prevailing Time (PPT)</td>
<td>datetime</td>
<td>No</td>
</tr>
<tr>
<td>intervalEndTime_PPT</td>
<td>End time of the interval within the market run in Pacific Prevailing Time (PPT)</td>
<td>datetime</td>
<td>No</td>
</tr>
<tr>
<td>MW</td>
<td>Scheduled MW for the current record.</td>
<td>float</td>
<td>Yes</td>
</tr>
</tbody>
</table>
25 Retrieve Market Forecast

25.1 Operation Details

The service has one operation with three message types. All input and output messages are in XML format.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Message Types</th>
<th>Message</th>
<th>WSDL</th>
<th>XSD</th>
</tr>
</thead>
<tbody>
<tr>
<td>retrieveMarketForecast</td>
<td>Input</td>
<td>retrieveMarketForecastRequest</td>
<td>retrieveMarketForecast_v1.wsdl</td>
<td>RequestResourceForecast_v1.xsd</td>
</tr>
<tr>
<td></td>
<td></td>
<td>retrieveMarketForecast_DocAttachRequest</td>
<td>retrieveMarketForecast_v1_DocAttach.wsdl</td>
<td>ResourceForecast_v1.xsd</td>
</tr>
<tr>
<td>Output</td>
<td></td>
<td>retrieveMarketForecastResponse</td>
<td>retrieveMarketForecast_v1.wsdl</td>
<td>ResourceForecast_v1.xsd</td>
</tr>
<tr>
<td></td>
<td></td>
<td>retrieveMarketForecast_DocAttachResponse</td>
<td>retrieveMarketForecast_v1_DocAttach.wsdl</td>
<td>ResourceForecast_v1.xsd</td>
</tr>
<tr>
<td>Fault</td>
<td></td>
<td>faultReturn</td>
<td></td>
<td>StandardOutput.xsd</td>
</tr>
</tbody>
</table>

25.2 Market Forecast Request

25.2.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message Header (optional)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Message Payload

The requestResourceForecast.xsd is used for both services: EIRForecast and MarketForecast. The data elements described below are those relevant in providing the request for the retrieveMarketForecast service only.

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td>dateTimeEnd</td>
<td>Ending DateTime of the time period for which the data is requested. Maximum of 31 days can be included in this report.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>dateTimeStart</td>
<td>Starting DateTime of the time period for which the data is requested.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>resource</td>
<td>The unique identifier for a resource.</td>
<td>string</td>
<td>No</td>
</tr>
</tbody>
</table>
## 25.3 Market Forecast Response

### 25.3.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Message Header</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced.</td>
<td>dateTime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Minor Version Identifier; Date reflecting the release this latest version update was related to.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Message Payload (MarketForecast)</strong></td>
<td>The ResourceForecast.xsd is used for both services: EIRForecast and MarketForecast.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>resource</td>
<td>The unique identifier for a resource.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>Scheduling Coordinator</td>
<td>The unique identifier for a scheduling coordinator (SC).</td>
<td>string</td>
<td>Yes</td>
</tr>
</tbody>
</table>

The data elements described below are those relevant in providing the response for the retrieveMarketForecast service only.

- **resource**: The unique identifier for a resource.
- **Scheduling Coordinator**: The unique identifier for a scheduling coordinator (SC).
<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td>marketForecastType</td>
<td>Type of market forecast (i.e., final forecast used in the market run):</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Valid values:&lt;br&gt;<strong>RTUC</strong>: Real Time Unit Commitment; 15-minute forecast used in</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>the RTUC/RTPD market run&lt;br&gt;<strong>RTD</strong>: Real Time Dispatch; 5-minute forecast used in</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>the RTD market run</td>
<td></td>
<td></td>
</tr>
<tr>
<td>energyForecastType</td>
<td>Energy forecast type.</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Valid values:&lt;br&gt;<strong>EPF</strong>: Energy Production Forecast&lt;br&gt;<strong>ECF</strong>: Energy Consumption</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Forecast</td>
<td></td>
<td></td>
</tr>
<tr>
<td>marketEndTime</td>
<td>End time of the market horizon in Greenwich Mean Time (GMT)</td>
<td>datetime</td>
<td>No</td>
</tr>
<tr>
<td>marketEndTime_PPT</td>
<td>End time of the market horizon in Pacific Prevailing Time (PPT)</td>
<td>datetime</td>
<td>No</td>
</tr>
<tr>
<td>marketStartTime</td>
<td>Start time of the market horizon in Greenwich Mean Time (GMT)</td>
<td>datetime</td>
<td>Yes</td>
</tr>
<tr>
<td>marketStartTime_PP</td>
<td>Start time of the market horizon in Pacific Prevailing Time (PPT)</td>
<td>datetime</td>
<td>No</td>
</tr>
<tr>
<td>intervalStartTime</td>
<td>Start time of the interval within the market run in Greenwich Mean Time (GMT)</td>
<td>datetime</td>
<td>Yes</td>
</tr>
<tr>
<td>intervalEndTime</td>
<td>End time of the interval within the market run in Greenwich Mean Time (GMT)</td>
<td>datetime</td>
<td>No</td>
</tr>
<tr>
<td>intervalStartTime_PP</td>
<td>Start time of the interval within the market run in Pacific Prevailing Time (PPT)</td>
<td>datetime</td>
<td>No</td>
</tr>
<tr>
<td>intervalEndTime_PP</td>
<td>End time of the interval within the market run in Pacific Prevailing Time (PPT)</td>
<td>datetime</td>
<td>No</td>
</tr>
<tr>
<td>MW</td>
<td>Resource-level forecast in MW unit of measurement</td>
<td>float</td>
<td>Yes</td>
</tr>
</tbody>
</table>
26 Fault Return

26.1 Fault Return
The fault return message is the same for all CMRI services.

26.1.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td>id</td>
<td>Event log identifier.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>name</td>
<td>Event log name.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>description</td>
<td>Event log description.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>type</td>
<td>Event log type.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>creationTime</td>
<td>Event log creation time.</td>
<td>date</td>
<td>No</td>
</tr>
<tr>
<td>collectionType</td>
<td>Event log collection type.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>collectionQuantity</td>
<td>Event log collection quantity.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>Event.result</td>
<td>Event result.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>Event.id</td>
<td>Event identifier.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>Event.name</td>
<td>Event name.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>Event.description</td>
<td>Event description.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>Event.creationTime</td>
<td>Event creation time.</td>
<td>dateTime</td>
<td>No</td>
</tr>
<tr>
<td>Event.severity</td>
<td>Event severity.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>Event.priority</td>
<td>Event priority.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>Event.sequence</td>
<td>Event sequence number.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>Service.id</td>
<td>Service identifier.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>Service.name</td>
<td>Service name.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>Service.description</td>
<td>Service description.</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>Service.comments</td>
<td>Service comments.</td>
<td>string</td>
<td>No</td>
</tr>
</tbody>
</table>
26.1.2 Schema (StandardOutput.xsd)

```xml
<?xml version="1.0" encoding="UTF-8"?>
    <xs:element name="outputDataType" type="m:outputDataType"/>
    <xs:complexType name="outputDataType">
        <xs:sequence>
            <xs:element name="EventLog" type="m:EventLog" maxOccurs="unbounded"/>
        </xs:sequence>
    </xs:complexType>
    <xs:complexType name="EventLog">
        <xs:sequence>
            <xs:element name="id" type="xs:string" minOccurs="0"/>
            <xs:element name="name" type="xs:string" minOccurs="0"/>
            <xs:element name="description" type="xs:string" minOccurs="0"/>
            <xs:element name="type" type="xs:string" minOccurs="0"/>
            <xs:element name="creationTime" type="xs:dateTime" minOccurs="0"/>
            <xs:element name="collectionType" type="xs:string" minOccurs="0"/>
            <xs:element name="collectionQuantity" type="xs:string" minOccurs="0"/>
            <xs:element name="Event" type="m:Event" maxOccurs="unbounded"/>
            <xs:element name="Service" type="m:Service" minOccurs="0"/>
        </xs:sequence>
    </xs:complexType>
    <xs:complexType name="Event">
        <xs:sequence>
            <xs:element name="result" type="xs:string" />
            <xs:element name="id" type="xs:string" minOccurs="0"/>
            <xs:element name="name" type="xs:string" minOccurs="0"/>
            <xs:element name="description" type="xs:string" minOccurs="0"/>
            <xs:element name="creationTime" type="xs:dateTime" minOccurs="0"/>
            <xs:element name="severity" type="xs:string" minOccurs="0"/>
            <xs:element name="priority" type="xs:string" minOccurs="0"/>
            <xs:element name="sequenceNumber" type="xs:string" minOccurs="0"/>
            <xs:element name="eventType" type="xs:string" minOccurs="0"/>
        </xs:sequence>
    </xs:complexType>
    <xs:complexType name="Service">
        <xs:sequence>
            <xs:element name="id" type="xs:string"/>
            <xs:element name="name" type="xs:string"/>
            <xs:element name="description" type="xs:string"/>
            <xs:element name="comments" type="xs:string"/>
        </xs:sequence>
    </xs:complexType>
</xs:schema>
```
27 Appendix – dateTime Data Type

The dateTime data type is used to specify a date and a time. Any valid XML datetime format with timezone can be used for the request, but the response will always follow one format. TimeZone information in the request and response is mandatory and it can either be specified as offset hours from UTC or use the “Z” timezone identifier.

The dateTime is specified in the following form YYYY-MM-DDThh:mm:ss[(+-)hh:mm:ss] where:

- **YYYY** indicates the year
- **MM** indicates the month
- **DD** indicates the day
- **T** indicates the start of the required time section
- **hh** indicates the hour
- **mm** indicates the minute
- **ss** indicates the second
- + (plus) or - (minus) to specify an offset from the UTC time

OR

YYYY-MM-DDThh:mm:ssZ – The ‘Z’ at the end indicates that the timezone is in GMT/UTC format

Note: All components are required.

**Request Examples of dateTime format:**
- 2013-07-10T00:00:00-07:00 – offset of 7 hours based on Pacific Daylight Time
- 2013-01-20T00:00:00-08:00 – offset of 8 hours based on Pacific Standard Time
- 2013-01-20T08:00:00-00:00 – Timestamp in GMT/UTC
- 2013-07-10T07:00:00Z – Timestamp in GMT/UTC

**Response Example of dateTime format:**
- 2013-01-20T08:00:00-00:00 – Timestamp in GMT/UTC
- 2013-07-10T07:00:00-00:00 – Timestamp in GMT/UTC

Note: There will be a standard output error response returned if the request refers to a datetime format other than the defined acceptable formats described above.