



MSRS Report Format Documentation

Regulation Shoulder Opportunity Cost Details

Version 1

Revision History

DATE	REVISION	DESCRIPTION
12/1/2026	1	Initial Distribution

1 Report

MSRS Report Name: Regulation Shoulder Opportunity Cost Details

Report short name for User Interface: Regulation Shoulder Opportunity Cost Details

Download File Name Abbreviation: ShdOppCost

Data Granularity: Sub-hourly

Frequency: Updated daily

Range Displayed on Report: Start Date through End Date

2 Supported Billing Line Items

- Regulation and Frequency Response Service Credit (2340)

3 Report Content Summary

This report displays the customer account's 5-minute Regulation Shoulder Opportunity Cost Details for generation units. The amounts in this report do not reflect the customer account's share of jointly owned resources. All owners will see the full MWs and opportunity costs assigned to the resource.

4 Summary of Changes and Special Logic

5 Report Columns

The following columns will appear in the body of the report:

Online and CSV Column Name	XML Column Name	Column Number	Data Type
Customer ID	CUSTOMER_ID	4000.01	INTEGER
Customer Code	CUSTOMER_CODE	4000.02	VARCHAR2(6)
EPT Interval Ending	EPT_INTERVAL_ENDING	4001.40	VARCHAR2(40) mm/dd/yyyy HH24:MM format (Displays first interval of the day as hour 0 minute 05 and last interval of the day as hour 24 minute 00)
GMT Interval Ending	GMT_INTERVAL_ENDING	4001.41	VARCHAR2(40) mm/dd/yyyy HH24:MM format (Displays first interval of the day in relation to EPT interval as hour 04 minute 05 or hour 05 minute 05 (EDT/EST depending) and last interval of the day as hour 04 minute 00 of the next day or hour 05 minute 00 of the next day (EDT/EST depending))
Unit ID	UNIT_ID	4000.63	NUMBER(8,0)
Unit Name	UNIT_NAME	4000.64	VARCHAR2(75)
Unit Ownership Share	UNIT_OWNERSHIP_SHARE	3000.80	NUMBER
EPT Shoulder Interval Ending	EPT_SHLD_INTERVAL_ENDING	4001.46	VARCHAR2(40)

			mm/dd/yyyy HH24:MM format (Displays first interval of the day as hour 0 minute 05 and last interval of the day as hour 24 minute 00)
Ramp In Indicator	RAMP_IN_INDICATOR	3004.60	VARCHAR2(1) See possible values below
Ramp Out Indicator	RAMP_OUT_INDICATOR	3004.61	VARCHAR2(1) See possible values below
RT Schedule Id	RT_SCHED_ID	3002.19	NUMBER
Economic Min MW	ECON_MIN_MW	3002.22	NUMBER
Economic Max MW	ECON_MAX_MW	3002.23	NUMBER
Regulation Min MW	REG_MIN_MW	3004.41	NUMBER
Regulation Max MW	REG_MAX_MW	3004.42	NUMBER
Reg Min MW Used	REG_MIN_MW_USED	2340.78	NUMBER
Reg Max MW Used	REG_MAX_MW_USED	2340.79	NUMBER
PJM-Assigned RegUp MW	PJM_ASSIGNED_REGUP_MW	2340.68	NUMBER
PJM-Assigned RegDn MW	PJM_ASSIGNED_REGDN_MW	2340.69	NUMBER
Tracking Ramp Limit Desired MW	TRLD_MW	2340.80	NUMBER
Tracking Regulation Set Point MW	TRLD_AS_MW	2340.81	NUMBER
RT LMP (\$/MWh)	RT_LMP	3000.25	NUMBER
Begin Point MW	BEGIN_POINT_MW	2340.83	NUMBER
End Point MW	END_POINT_MW	2340.84	NUMBER
RT Energy Offer Amount (\$)	RT_ENERGY_OFFER_AMT	3001.88	NUMBER
Shoulder Opportunity Cost (\$)	SHLD_OPPORTUNITY_COST	2340.97	NUMBER
Version	VERSION	4000.07	VARCHAR2(12)

Ramp In Indicator: Y or N

Ramp Out Indicator: Y or N

6 CSV Report Example

See Excel file titled "Regulation Shoulder Opportunity Cost Details CSV Format.csv"

7 XML Report Example

See XML file titled "Regulation Shoulder Opportunity Cost Details XML Format.xml"

8 Supporting Calculations

Reg Min MW Used = Max (Economic Min MW, Regulation Min MW) from the Regulating interval (EPT Interval Ending)

$$2340.78 = \text{Max} (3002.22, 3004.41)$$

Reg Max MW Used = Min (Economic Max MW, Reg Max MW) from the Regulation interval (EPT Interval Ending)

$$2340.79 = \text{Min} (3002.23, 3004.42)$$

Tracking Ramp Limit Desired MW (2340.80) is the Tracking Ramp Limit Desired MW from the Shoulder interval (EPT Shoulder Interval Ending)

Tracking Regulation Set Point MW (2340.81) is the Tracking Set Point MW from the Regulating interval (EPT Interval Ending)

Begin Point MW = Min (Tracking Ramp Limit Desired MW, Tracking Regulation Set Point MW)

$$2340.83 = \text{Min} (2340.80, 2340.81)$$

End Point MW = Max (Tracking Ramp Limit Desired MW, Tracking Regulation Set Point MW)

$$2340.84 = \text{Max} (2340.80, 2340.81)$$

RT Energy Offer Amount (3001.88) = Energy offer amount from the incremental energy offer for the unit's RT Schedule Id between the Begin Point MW and End Point MW

If Tracking Ramp Limit Desired MW (2340.80) >= Reg Max MW Used (2340.79)

Shoulder Opportunity Cost (\$) = Max {(RT LMP * (End Point MW - Begin Point MW)) - RT Energy Offer Amount, 0}

$$2340.97 = \text{Max} \{(3000.25 * (2340.84 - 2340.83)) - 3001.88, 0\}$$

Else If Tracking Ramp Limit Desired MW (2340.80) <= Reg Min MW Used (2340.78)

Shoulder Opportunity Cost (\$) = Max {(RT Energy Offer Amount - (RT LMP * (End Point MW - Begin Point MW)), 0}

2340.97 = Max {(3001.88 - (3000.25 * (2340.84 - 2340.83)), 0}

Else

Shoulder Opportunity Cost (\$) = 0

2340.97 = 0