

# Grid Management Charges

*Presented by:*

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# Purpose of GMC

- ⇒ Monthly charges assessed on participating SCs for the purpose of recovering all of the ISO's costs including:
  - Start-up
  - Financing
  - Ongoing Operations & Maintenance
  - Administration
- ⇒ Provides a predictable charge for Market Participants while ensuring timely cost recovery for the ISO.

## GMC Rate Calculation

- ⇒ Rates are calculated as set forth in Tariff Section 11.2 and Appendix F, Schedule 1.

# Application & Allocation

- ⇒ Levied monthly on all Market Participants; no daily charges.
  - File Specs will show daily detail without dollar amounts
  - Monthly Detail Settlement Records contain billable quantity per unit price & total.
- ⇒ Charges are shown as a monthly charge on the Preliminary Settlements & the Final Settlements Statements for the last day of each month.

# Why was GMC Modified?

- ⇒ The charges were redesigned to better reflect cause causation.
- ⇒ Ensures charges are allocated accordingly.

# Charge Type Overview

- ⇒ Under Grid Reliability Services “umbrella”, ISO provides safe reliable operation of the Control Area, coordinates for transmission expansion, coordination with neighboring Control Areas, and complies with regional and national reliability standards
- ⇒ Comprised of a “scalable” (4503, 4505, 4506) billing determinant, i.e. one that varies according to use or size of flow and two non-scalable (CT4501 & 4502) billing determinants

# Charge Type Overview

- ⇒ The Forward Scheduling Charge Types recovers the ISO's costs associated with accepting, processing, and validating Day-Ahead (DA) and Hour-Ahead (HA) schedules. A schedule in this context is any import, export, load, generation, inter-SC trade, or Ancillary Service final HA Schedule. (CT 4511, 4512, & 4513)

# Charge Type Overview

- ⇒ The Market Usage charges contain the activities associated with processing Supplemental Energy and Ancillary Services, determining the Real-Time Market Clearing Price, maintaining and controlling the OASIS, monitoring market performance, and ensuring generator compliance with market protocols. (CT 4534, 4535 & 4536)

# Charge Type Overview

- ⇒ The Congestion Management Charge Type recovers the ISO's costs for operating the Congestion Management process. (CT 4522)
- ⇒ The Settlements, Metering, and Client Relations charge is a \$500 per month charge on any business associate that accrues any settlement charges/credits during the current trade month. (CT 4575)
- ⇒ Modesto Irrigation District charge is assessed the Grid Management Charge at a static rate per month with a potential true up between PGE and the ISO on a quarterly basis. (CT4576, note; expires 12/31/2006)

# CT 4501 Non-Coincident Peak

# CT 4502 Non-Coincident Off-Peak

- ⇒ Purpose of charge: Recovers ISO's costs of ensuring safe, reliable operation of the transmission grid that meets regional and national regulatory requirements **without** features that are scalable, i.e. that vary according to use or size of flow.
- ⇒ Billing Determinant: is **either** monthly Non-Coincident Peak (NCP) MW demand or Non-Coincident Off Peak (NCOP) MW demand.
- ⇒ Most important step in validation is determining the correct hour
  - NCP = between hour 7 & 22
  - NCOP = between hour 23 & 6

# CT 4501 Calculation

## Sample SC Activity

- 8200 MWh of Metered Control Area Load (consisting of 4200 MWh metered Load and 4000 MWh export)
- 3650 MWh import
- 4550 MWh Inter SC Trade (receives energy in ZP26 to serve Load in SP 15)
- 574 MW A/S Operating Reserve allocation (e.g., Spin, Non-Spin, Regulation)
- 219 MWh Net Uninstructed Deviation
- 6 MW non-coincident peak demand (metered Load, no exports)
- 3 MW non-coincident off-peak demand

Note: import and export transactions not scheduled at same inter-connection

**CRS NCP Amt = Monthly NCP Load Qty \* CRS NCP Rate**

**CRS NCP Amt = 6 MW \* \$89.9333/MW**

**\$539.60**

# CT 4503 Export Energy

⇒ Billing Determinant: is sum of gross export RT flow (plus transmission losses for applicable system resources) for an SC for all Settlement Intervals in a trade month.

# CT 4503 Calculation

- 8200 MWh of Metered Control Area Load (consisting of 4200 MWh metered Load and 4000 MWh export)
- 3650 MWh import
- 4550 MWh Inter SC Trade (receives energy in ZP26 to serve Load in SP 15)
- 574 MW A/S Operating Reserve allocation (e.g., Spin, Non-Spin, Regulation)
- 219 MWh Net Uninstructed Deviation
- 6 MW non-coincident peak demand (metered Load, no exports)
- 3 MW non-coincident off-peak demand

Note: import and export transactions not scheduled at same inter-connection

**Monthly Charge = Monthly CRS Export Qty \* CRS Export Rate**

**Monthly Charge = 4000 MW \* \$.4952/MWh**

**\$1,980.80**

# CT 4505 Net Energy

- ⇒ Purpose of charge: Recovers costs associated with managing total flows on the transmission grid.
- ⇒ Billing Determinant: is metered load plus export quantity (Metered Control Area Load)
  - Represents total flows on the transmission grid
- ⇒ Metered Control Area Load is the SC's metered energy for the supply of loads in the ISO Control Area plus all energy for exports from the ISO Control Area. (Limited exemptions for on-site Generation, and Load served by QF Generation).

# CT 4505 Calculation

- 8200 MWh of Metered Control Area Load (consisting of 4200 MWh metered Load and 4000 MWh export)
- 3650 MWh import
- 4550 MWh Inter SC Trade (receives energy in ZP26 to serve Load in SP 15)
- 574 MW A/S Operating Reserve allocation (e.g., Spin, Non-Spin, Regulation)
- 219 MWh Net Uninstructed Deviation
- 6 MW non-coincident peak demand (metered Load, no exports)
- 3 MW non-coincident off-peak demand

Note: import and export transactions not scheduled at same inter-connection

**Monthly Amt = ETS Metered Demand Qty \* ETS Rate**

**Monthly Amt = 8200 MW \* \$.2950/MWh**

**\$2,419.00**

# CT 4506 Energy & Transmission Services Deviations

- ⇒ Purpose of charge: Recovers costs associated with managing real-time inadvertent flows.
- ⇒ Billing Determinant: Represents inadvertent flows on the transmission grid in Megawatt Hours.
- ⇒ Charge is based on the absolute value of net uninstructed deviations by Settlement Interval to reflect a participant's impact on the grid.

# CT 4506 Calculation

- 8200 MWh of Metered Control Area Load (consisting of 4200 MWh metered Load and 4000 MWh export)
- 3650 MWh import
- 4550 MWh Inter SC Trade (receives energy in ZP26 to serve Load in SP 15)
- 574 MW A/S Operating Reserve allocation (e.g., Spin, Non-Spin, Regulation)
- 219 MWh Net Uninstructed Deviation
- 6 MW non-coincident peak demand (metered Load, no exports)
- 3 MW non-coincident off-peak demand

Note: import and export transactions not scheduled at same inter-connection

**Monthly Amt = ETS Metered Deviations Qty \* Monthly ETS Deviations Rate**

**Monthly Amt = 219 MW \* \$.8749/MWh**

**\$191.60**

# CT 4511 Forward Scheduling

- ⇒ Purpose of charge: Recovers costs associated with accepting, processing, & validating DA & HA Schedules.
  - ⇒ “Schedule” is any import, export, load, generation, or Ancillary Service final HA schedule.
  - ⇒ Excludes Inter-SC Trades
  
- ⇒ Billing Determinant: is calculated using the sum of the SC’s final HA schedules, including all awarded A/S bids with a value greater than .03 MW or less than -.03 MW

# CT 4511 Calculation

- 8200 MWh of Metered Control Area Load (consisting of 4200 MWh metered Load and 4000 MWh export)
- 3650 MWh import
- 4550 MWh Inter SC Trade (receives energy in ZP26 to serve Load in SP 15)
- 574 MW A/S Operating Reserve allocation (e.g., Spin, Non-Spin, Regulation)
- 219 MWh Net Uninstructed Deviation
- 6 MW non-coincident peak demand (metered Load, no exports)
- 3 MW non-coincident off-peak demand

Note: import and export transactions not scheduled at same inter-connection

**Monthly Amt = Total Schedule Count Excluding Inter-SC Trades  
\* GMC Forward Scheduling Services Rate**

**Monthly Amt = (3 schedules/hr \* 730 hr/mo) \$.7639/Schedule**

**\$1,672.94**

# CT 4512 Inter-SC Trade

- ⇒ Purpose of charge: Recovers costs associated with accepting, processing, & validating DA & HA Schedules.
- ⇒ Billing Determinant: is calculated using the sum of the SC's Inter-SC Schedule count with a value greater than .03MW or less than -.03MW.

# CT 4512 Calculation

- 8200 MWh of Metered Control Area Load (consisting of 4200 MWh metered Load and 4000 MWh export)
- 3650 MWh import
- 4550 MWh Inter SC Trade (receives energy in ZP26 to serve Load in SP 15)
- 574 MW A/S Operating Reserve allocation (e.g., Spin, Non-Spin, Regulation)
- 219 MWh Net Uninstructed Deviation
- 6 MW non-coincident peak demand (metered Load, no exports)
- 3 MW non-coincident off-peak demand

Note: import and export transactions not scheduled at same inter-connection

**Monthly Amt = Total Inter-SC Trade Schedule Count \* GMC  
Forward Scheduling Services Rate**

**Monthly Amt = (1 schedules/hr \* 730 hr/mo) \$.3819/Schedule**

**\$278.79**

# CT 4534 Ancillary Services

- ⇒ Purpose of charge: Recovers costs associated with operating the Ancillary Service Market.
- ⇒ Billing Determinant: is purchases and sales of Ancillary Services.
- ⇒ Market Usage for each SC is calculated using the absolute value of each SC's market purchases & sales of A/S
- ⇒ Self-provided A/S are exempt from this charge

# CT 4534 Calculation

- 8200 MWh of Metered Control Area Load (consisting of 4200 MWh metered Load and 4000 MWh export)
- 3650 MWh import
- 4550 MWh Inter SC Trade (receives energy in ZP26 to serve Load in SP 15)
- 574 MW A/S Operating Reserve allocation (e.g., Spin, Non-Spin, Regulation)
- 219 MWh Net Uninstructed Deviation
- 6 MW non-coincident peak demand (metered Load, no exports)
- 3 MW non-coincident off-peak demand

Note: import and export transactions not scheduled at same inter-connection

**Monthly Amt = Total GMC Market Usage A/S Qty \* GMC Market Usage A/S Rate**

**Monthly Amt = 574 MW (A/S Obligation) \* \$.5824/MW**

**\$334.30**

# CT 4535 Instructed Imbalance Energy

- ⇒ Purpose of charge: Recovers costs associated with operating the Real-Time Imbalance Energy Market.
- ⇒ Billing Determinant: is absolute values of all Imbalance Energy Dispatch quantities by location & interval.
- ⇒ Market Usage charge for each SC is calculated using the absolute value of each SC's Instructed Imbalance Energy by resource.

# CT 4535 Calculation

- 8200 MWh of Metered Control Area Load (consisting of 4200 MWh metered Load and 4000 MWh export)
- 3650 MWh import
- 4550 MWh Inter SC Trade (receives energy in ZP26 to serve Load in SP 15)
- 574 MW A/S Operating Reserve allocation (e.g., Spin, Non-Spin, Regulation)
- 219 MWh Net Uninstructed Deviation
- 6 MW non-coincident peak demand (metered Load, no exports)
- 3 MW non-coincident off-peak demand

Note: import and export transactions not scheduled at same inter-connection

**Monthly Amt = Total GMC Market Usage IIE Qty \* GMC Market Usage IIE Rate**

**No Instructed Imbalance Energy!**

# CT 4536 Uninstructed Imbalance Energy

- ⇒ Purpose of charge: Recovers costs associated with managing real-time inadvertent flows.
- ⇒ Billing Determinant: is absolute value of net portfolio deviations by Settlement interval.
- ⇒ Charge is based on the absolute value of net uninstructed deviations by Settlement Interval to reflect a participant's impact on the grid.

# CT 4536 Calculation

- 8200 MWh of Metered Control Area Load (consisting of 4200 MWh metered Load and 4000 MWh export)
- 3650 MWh import
- 4550 MWh Inter SC Trade (receives energy in ZP26 to serve Load in SP 15)
- 574 MW A/S Operating Reserve allocation (e.g., Spin, Non-Spin, Regulation)
- 219 MWh Net Uninstructed Deviation
- 6 MW non-coincident peak demand (metered Load, no exports)
- 3 MW non-coincident off-peak demand

Note: import and export transactions not scheduled at same inter-connection

**Monthly Charge = Total GMC Market Usage UIE Qty \* GMC Market Usage UIE Rate**

**Monthly Amt = 219 MWh \* \$.5824/MW**

**\$127.55**

# CT 4522 Congestion Management

- ⇒ Purpose of charge: Recovers ISO's costs of operating the Congestion Management process, Firm Transmission Right (FTR) auction, FTR monitoring, and FTR secondary market monitoring and scheduling
- ⇒ Billing Determinant: the absolute value of the final HA net scheduled inter-zonal flow for each path for that SC.
- ⇒ Applicable to schedules across the 3 active internal zones and zonal interface with external zones.
- ⇒ FTRs scheduled across an inter-zonal interface are not exempt from this charge.

# CT 4522 Calculation

- 8200 MWh of Metered Control Area Load (consisting of 4200 MWh metered Load and 4000 MWh export)
- 3650 MWh import
- 4550 MWh Inter SC Trade (receives energy in ZP26 to serve Load in SP 15)
- 574 MW A/S Operating Reserve allocation (e.g., Spin, Non-Spin, Regulation)
- 219 MWh Net Uninstructed Deviation
- 6 MW non-coincident peak demand (metered Load, no exports)
- 3 MW non-coincident off-peak demand

Note: import and export transactions not scheduled at same inter-connection

**Monthly Charge = |Net HA Scheduled Inter-zonal New Firm Use Qty|  
\* GMC Congestion Mgt Rate**

**Monthly Charge = 12,200 MWh \* \$.1464/MWh**

**\$1,786.08**

# CT 4575 Settlements, Metering & Client Relations

- ⇒ Purpose of charge: Recovers costs associated with settlements, metering, & billing activities
  - Includes client relations costs to maintain customer account data, provide account information to customers, resolve customer disputes, address customer inquires, and provide training
- ⇒ Assessed at a flat rate of \$500/month on any Business Associate that accrues any settlement charges/credits during the current trade month.
- ⇒ Assessed on SCs that have settlement activity related to the current trade month. Settlement activity is based on any non-\$0 balances in the settlement system summary table

# CT 4575 Calculation

- 8200 MWh of Metered Control Area Load (consisting of 4200 MWh metered Load and 4000 MWh export)
- 3650 MWh import
- 4550 MWh Inter SC Trade (receives energy in ZP26 to serve Load in SP 15)
- 574 MW A/S Operating Reserve allocation (e.g., Spin, Non-Spin, Regulation)
- 219 MWh Net Uninstructed Deviation
- 6 MW non-coincident peak demand (metered Load, no exports)
- 3 MW non-coincident off-peak demand

Note: import and export transactions not scheduled at same inter-connection

**Monthly Charge = GMC SMCR Fee Amount**

**Based on settlements activity related to the current trade month**

**\$500.00**

# Example Calculation

For one month, an SC has the following activity:

- 8200 MWh of Metered Control Area Load (consisting of 4200 MWh metered Load and 4000 MWh export)
- 3650 MWh import
- 4550 MWh Inter SC Trade (receives energy in ZP26 to serve Load in SP 15)
- 574 MW A/S Operating Reserve allocation (e.g., Spin, Non-Spin, Regulation)
- 219 MWh Net Uninstructed Deviation
- 6 MW non-coincident peak demand (metered Load, no exports)
- 3 MW non-coincident off-peak demand

Note: import and export transactions not scheduled at same inter-connection

**What is the total GMC due ISO for the month?**

**\$9,330.66\***

\* Charge is \$3,082.57 lower than 2005!

# Grid Management Charges

## Questions?

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