Hydro Generation Adjustment
Rate Schedule HGA

I. Applicability

This Rate Schedule HGA applies to all customers receiving retail electric service from SMUD. Annually, SMUD will calculate how the yearly variation of precipitation affects hydro generation from SMUD's Upper American River Project (UARP) and impacts the SMUD budget. As of April 1, 2024, SMUD will also calculate how the annual hydro generation delivery variances from the Western Area Power Administration's (WAPA) Central Valley Project (CVP) impact the SMUD budget.

II. Conditions

A. General Conditions

1. The Hydro Generation Adjustment (HGA) precipitation period begins April 1 of the previous year and ends on March 31 of the current year (Water Year).
2. The price of power delivered into the area designated as North Path 15 (NP15) will be used to determine the dollar impact of any excess or shortfall of energy. If NP15 is no longer available, then a suitable replacement will be used.

B. SMUD Conditions

1. The actual inches of precipitation (AP) for each period shall be measured at the Fresh Pond measuring station or suitable replacement representative of the UARP watershed.
2. The AP will be compared to the median (midpoint) of inches of precipitation (MP), with the most recent years of data available at the established measuring station, up to a maximum of 50 years.
3. SMUD estimates that each inch of precipitation at Fresh Pond results in 28,000 megawatt hours (MWh) of generation in the UARP.
4. The AP will be capped at a maximum of 80 inches per Water Year to accommodate for spill at the hydroelectric facilities in the UARP.

C. WAPA Conditions

1. The monthly Forecasted Delivery (FD) is provided by WAPA.
2. The FD will be compared to the Actual Delivery (AD) as identified by SMUD.

III. Budget Impact Determination

A. SMUD Budget Impact Determination

The following calculations will be used to determine the SMUD budget impact (SBI) from precipitation variances:

1. **Precipitation Variance**

   Inches of Precipitation Variance (± IPV) = MP – AP

   The variance of precipitation equals the difference between the 50-year median and the actual inches of precipitation. If the measuring station changes, the number of years used to determine the median precipitation may vary depending on the volume of historical data available.

2. **Generation Conversion**
   ± IPV x 28,000 MWh/inch = ± MWh

   The variance of hydro generation, in megawatt hours, equals the inches of precipitation variance x 28,000 MWh/inch at Fresh Pond. If the measuring station changes, the MWh per inch may vary.

3. **Calculation of Budget Effects**
   The market cost of energy is the monthly average of the actual NP15 prices through April 1 and the monthly forecasted NP15 prices for the balance of the year. If NP15 is no longer available, then a suitable replacement will be used.

   ± MWh x market cost of energy ($/MWh) = ± SMUD budget impact ($)

B. WAPA Budget Impact Determination

The following calculations will be used to determine the WAPA budget impact (WBI) from energy delivery variances on a monthly basis:

1. **Energy Delivery Variance**

MWh Energy Delivery Variance (± EDV) = FD – AD

The energy delivery variance equals the difference between the monthly forecasted energy delivery and the monthly actual energy delivery.

2. **Calculation of Budget Effects**
The market cost of energy is the average NP15 price.

IV. Rate Stabilization Funds

A. Hydro Rate Stabilization Fund

The SBI will first be compared to the Hydro Rate Stabilization Fund (HRSF). In Water Years with above median precipitation, funds shall be deposited to the HRSF from Operating Revenues until the HRSF reaches a maximum of 6% of budgeted annual gross retail revenue, at which time subsequent excesses may be returned to the customer through the SMUD HGA. In Water Years with below median precipitation, funds will be withdrawn from the HRSF and applied to Operating Revenues until the HRSF balance reaches zero, at which time the SMUD HGA will be levied as a surcharge on electricity usage.

The SBI will not exceed ± 4 percent of budgeted annual gross retail revenue.

B. WAPA Rate Stabilization Fund

The WBI will first be compared to the WAPA Rate Stabilization Fund (WRSF). In Water Years where actual energy deliveries exceed the forecasted energy deliveries, funds shall be deposited to the WRSF from Operating Revenues until the WRSF reaches a maximum of 4% of budgeted annual gross retail revenue, at which time subsequent excesses may be returned to the customer through the WAPA HGA. In Water Years where actual energy deliveries are below the forecasted energy deliveries, funds will be withdrawn from the WRSF and applied to Operating Revenues until the WRSF balance reaches zero, at which time the WAPA HGA will be levied as a surcharge on electricity usage.

The WBI will not exceed ± 2 percent of budgeted annual gross retail revenue.

V. Rate Charges

A. SMUD Rate Charges

The SMUD HGA deposits into or transfers out of the Hydro Rate Stabilization Fund will be calculated as follows:

HRSF – SBI = Calculated HRSF

A. If Calculated HRSF is < 0

The Accountant
will transfer the remaining balance of the HRSF to Operating Revenues and the SMUD HGA will be set at:

$$-\frac{\text{Calculated HRSF}}{\text{Budgeted annual retail kWh sales}} = \text{SMUD HGA}$$

B. If Calculated HRSF is ≥ 0 and **≤ *6 percent of budgeted annual gross retail revenue***:

The Accountant will transfer the positive SBI out of the HRSF and into Operating Revenues and transfer the negative SBI into the HRSF from Operating Revenues.

C. If the Calculated HRSF is **> *6 percent of budgeted annual gross retail revenue***:

The Accountant will transfer the negative SBI into the HRSF from Operating Revenues up to 6 percent of budgeted annual gross retail revenue. The Board may authorize the SMUD HGA or direct the funds for another purpose. At the Board's direction, the SMUD HGA will be set at:

– $\frac{\text{(Calculated HRSF – } \textit{6\% of budgeted annual gross retail revenue}\text{)}}{\text{Budgeted annual retail kWh sales}} = \text{SMUD HGA}$

B. WAPA Rate Charges

The WAPA HGA deposits into or transfers out of the WAPA Rate Stabilization Fund will be calculated as follows:

WRSF – WBI = Calculated WRSF

A. If Calculated WRSF is < 0

The Accountant will transfer the remaining balance of the WRSF to Operating Revenues and the WAPA HGA will be set at:

– $\frac{\text{Calculated WRSF}}{\text{Budgeted annual retail kWh sales}} = \text{WAPA HGA}$

Any funds collected through the WAPA HGA will be deposited into the WRSF.

B. If Calculated WRSF is ≥ 0 and **≤ 4 *percent of budgeted annual gross retail revenue***:

The Accountant will transfer the positive WBI out of the WRSF and into Operating Revenues and transfer the negative WBI into the WRSF from Operating Revenues.

C. If the Calculated WRSF is **> 4 *percent of budgeted annual gross retail revenue***:

The Accountant will transfer the negative WBI into the WRSF from Operating Revenues up to 4 percent of budgeted annual gross retail revenue. The Board may authorize the WAPA HGA or direct the funds for another purpose. At the Board's direction, the WAPA HGA will be set at:

– $\frac{\text{(Calculated WRSF – 4}\textit{\% of budgeted annual gross retail revenue}\text{)}}{\text{Budgeted annual retail kWh sales}} = \text{WAPA HGA}$

C. Rate Charges

The HGA will be comprised of the SMUD HGA and the WAPA HGA.

HGA = SMUD HGA + WAPA HGA

VI. Application

The HGA is recalculated for each Water Year and will be applied to all rate schedules May 1 until April 30 of the following year.

(End)