

# Hydro Generation Adjustment Rate Schedule HGA

## I. Applicability

This Rate Schedule 1-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 the Upper American River Project (UARP) and impacts the SMUD budget.

## II. Conditions

- A. SMUD estimates that each inch of precipitation results in 35,000 megawatt hours (MWh) of generation.
- B. The HGA precipitation period begins April 1 of the previous year and ends on March 31 of the current year (Water Year).
- C. The actual inches of precipitation (AP) for each period shall be measured at the National Weather Service Pacific House Cooperative Observer measuring station or suitable replacement.
- D. The AP will be compared to the 50-year median (midpoint) inches of precipitation (MP) measured at Pacific House.
- E. 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.
- F. The AP will be capped at a maximum of 80 inches per Water Year to accommodate for spill.

## III. Budget Impact Determination

The following calculations will be used to determine SMUD's budget impact (BI) from precipitation variances:

### A. Precipitation Variance

$$\text{Inches of Precipitation Variance } (\pm \text{IPV}) = \text{MP} - \text{AP}$$

The variance of precipitation equals the difference between the 50-year median and the actual inches of precipitation.

### B. Generation Conversion

$$\pm \text{IPV} \quad \times \quad 35,000 \text{ MWh/inch} \quad = \quad \pm \text{MWh}$$

The variance of hydro generation, in megawatt hours, equals the inches of precipitation variance x 35,000 MWh/inch.

### C. Calculation of Budget Effects

The market cost of energy is the simple average of the actual first quarter monthly NP15 prices as of April 1 and the second, third and fourth quarters monthly forecast NP15 prices. If NP15 is no longer available, then a suitable replacement will be used.

$$\pm \text{MWh} \quad \times \quad \text{market cost of energy } (\$/\text{MWh}) \quad = \quad \pm \text{budget impact } (\$)$$

## IV. Hydro Rate Stabilization Fund

The BI 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 Hydro Generation Adjustment (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 HGA will be levied as a surcharge on electricity usage.

## V. Budget Impact Limitations

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The BI will not exceed  $\pm 4$  percent of budgeted annual gross retail revenue.

## VI. Rate Charges

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

**HRSF – BI = Calculated HRSF**

- A.** If Calculated HRSF is  $< 0$

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

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

- B.** If Calculated HRSF is  $\geq 0$  and  $\leq 6$  percent of budgeted annual gross retail revenue:

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

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

## VII. Application

The HGA became effective July 1, 2008. The HGA is recalculated for each Water Year and will be applied to the rate schedules May 1 until April 30 of the following year.

(End)