

## **Electric Utility Revenue Stability Adjustment Factor**

### **Section 1 – Background and Description**

The Regulatory Subgroup of MADRI developed this Revenue Stability Model Rate Rider at the request of the MADRI Steering Committee. The Revenue Stability Model Rate Rider is designed to mitigate the dependent relationship between electric distribution energy sales and profits, otherwise known as the “throughput incentive.”

A per-customer revenue stability mechanism is widely regarded as the best approach to meet this objective. This approach has already been implemented for distribution rates by Baltimore Gas & Electric and Washington Gas in Maryland. It is also in use by Southern California Edison, as part of a more comprehensive Performance Based Ratemaking mechanism. The Regulatory Workgroup has used the existing mechanisms from Maryland to craft a model framework for electric utilities.

The Revenue Stability Adjustment Factor is designed to keep electric utility per-customer revenue collections at a relatively stable level. This type of mechanism works in the same way as the fuel and purchased power cost adjustment mechanisms that have been in general use within the US regulatory scheme for a number of years; it is designed to function as a rider to certain basic rate schedules and to stabilize revenues by periodically adjusting base rates to eliminate swings in revenue collections associated with changes in average consumption by customers.

The Revenue Stability Adjustment Factor is not intended to introduce shortfalls or windfalls in revenues relative to what the utility would have experienced in the absence of the adjustment. Rather, it is intended to shield the utility from the adverse impacts of reduced consumption by consumers as a result of the deployment of demand-side resources such as distributed generation, load management and energy efficiency. In the absence of additional refinements in the computation of the revenues to be collected by the Revenue Stability Adjustment Factor, a significant difference between the incremental revenues associated with the addition or subtraction of customers, as well as overall trends in usage by existing customers, and the average revenues for all customers could conceivably introduce such shortfalls or windfalls. To prevent this, the revenues to be generated by the Revenue Stability Adjustment Factor may be modified to reflect this difference. This is accomplished in this model rate rider through the use of a “K” factor which is used to refine the revenue shortage or excess to be collected by the Revenue Stability Adjustment Factor, as further described below.

The full “cycle” for this mechanism involves the following steps:

- A. Test-year revenue requirements should be established for the customer, demand, and energy charge components for each rate schedule to which this rider applies. This process can involve newly authorized revenue requirements set in a pending rate case, or it can rely on the most recent rate case information if no current rate case is underway.
- B. Determine a date on which the Revenue Stability Adjustment Clause is to be effective.

C. There are three different “months” used in each Revenue Stability Adjustment Factor calculation:

- The “Reference Month” refers to the months for which actual billing data is used in the calculations. In the existing draft Model Rate Rider, the reference month is assumed to be the two calendar months prior to the Filing Month.
- The “Filing Month” refers to the month in which an actual calculation or reconciliation report is filed with the commission. The filing will use actual data from the Reference Month to compute the revenue adjustment factors. These factors will then be applied to bills in the billing month.
- The “Billing Month” is a month subsequent to the filing month in which the revenue adjustment factors are applied to bills. In the model rate rider, the billing month will follow the Filing Month by two calendar months.

D. Prepare and file, on or before a set day (e.g., the 10<sup>th</sup>) of the filing month, an adjustment factor computation for each applicable rate schedule.

E. Each subsequent filing month would use three different types of data:

- Test year data is used as the base for computing the target revenues for each tariff component, based on the per-customer average billing units for that component. Test year data is assumed to be based on the test information for each calendar month in the test year, in order to capture expected monthly deviations in consumption. This data should be weather normalized and should match the underlying billing units used to compute the current tariff rates. Test year data is also used to compute a “K” factor for the kWh and kW (if applicable) distribution charges. The K factor is computed by comparing use per customers during the test year to use per customer during the year prior to the test year. In order to capture longer term trends and to help mitigate anomalies in the test year and pre-test year data, this factor could be recomputed annually on a rolling average basis. Both the Test Year data and other data used for K Factor calculations should be weather normalized.
- Reference Month data is used to reflect actual consumption in the form of billing units on bills actually sent to customers. Reference Month customer billing units are multiplied by the test year revenues per customer and by the K Factor to determine the target revenues to be collected in the billing month. Reference month revenues are taken from customer billing records. The difference between target revenues and actual revenues represents the revenue increase or decrease that must be generated by the adjustment factor.
- Forecast Billing Month billing units are used in conjunction with the revenue shortfall or overage to compute an adjustment factor for the given tariff component (demand or energy).

## Section 2 – Model Rate Rider for a Revenue Stability Adjustment Factor

### 1. Applicability

This Rider is applicable to the following rate schedules:

*[list applicable rate schedules].*

### 2. Definitions

- 2.1. **Filing Month** means the month in which a Revenue Stability Adjustment Reconciliation filing is due.
- 2.2. **Reference Month** means the month that is two months prior to the filing month.
- 2.3. **Billing Month** means the month that is the second succeeding month after the Filing Month and is the month during which the Revenue Stability Adjustment is applied to customers' bills.

### 3. Revenue Stability Adjustment Factor

In addition to the amounts otherwise due from the customer under the customer's applicable rate schedule, the customer shall pay an additional amount, in the case of a positive adjustment, or receive a credit, in the case of a negative adjustment, equal to the Demand Charge Revenue Stability Adjustment Factor and the Energy Charge Revenue Stability Adjustment Factor as calculated in Section 4 of this rate rider multiplied by the customer's demand and energy billing units, respectively, appearing on the actual bill to which each such adjustment factor is being applied.

### 4. Calculation of Revenue Stability Adjustment Factors

- 4.1. **Demand Charge Revenue Stability Adjustment Factor** -- The Demand Charge Revenue Stability Adjustment Factor is computed in the following manner:

Value	Formula
<b>Demand Charge Revenue Stability Adjustment Factor</b>	$F_D = ((R_{DT} * N_C) - R_{DA} \pm R_{DR}) \div U_{kW}$
Where,	
<b>Target Demand Revenues per Customer</b>	$R_{DT} = R_{DB} * K_{D(t)}$
<b>Number of customers</b>	$N_C$
<b>Unadjusted Billed Demand Revenues for Reference Month</b>	$R_{DA}$
<b>Demand Reconciliation Revenues</b>	$R_{DR} = R_{De} - R_{Da}$

<b>Reference Month Expected Demand Charge Revenue Stability Adjustment Factor Revenues</b>	$R_{De}$
<b>Reference Month Actual Demand Charge Revenue Stability Adjustment Factor Revenues</b>	$R_{Da}$
<b>Billing Units for Billing Month</b>	$U_{kW}$
<b>And Where,</b>	
<b>Base Target Revenues per Customer</b>	$R_{DB} = R_{D(\text{TestYear})} \div C_{(\text{TestYear})}$
<b>And where,</b>	
<b>Test Year Demand Revenues</b>	$R_{D(\text{TestYear})}$
<b>Test Year Customers for Reference Month</b>	$C_{(\text{TestYear})}$
<b>And where,</b>	
<b>Demand Charge K Factor</b>	$K_{D(t)} = (R_{DB} \div R_{DP})^T$
<b>And where,</b>	
<b>Demand Revenues per Customer for the twelve months prior to the test year</b>	$R_{DP}$
<b>Number of years elapsed after test year</b>	$T$

4.2. The Demand Charge Revenue Stability Adjustment Factor shall be added to or subtracted from the demand charge rate for the applicable rate class for the billing month.

4.3. Energy Charge Revenue Stability Adjustment Factor -- The Energy Charge Revenue Stability Adjustment Factor is computed in the following manner:

<b>Description</b>	<b>Formula/Variable</b>
<b>Energy Charge Revenue Stability Adjustment Factor</b>	$F_E = ((R_{ET} * N_C) - R_{EA} \pm R_{ER}) \div U_{kWh}$
<b>Where,</b>	
<b>Target Energy Revenues per Customer</b>	$R_{ET} = R_{EB} * K_{E(t)}$
<b>Number of customers</b>	$N_C$
<b>Unadjusted Billed Energy Revenues for Reference Month</b>	$R_{EA}$
<b>Energy Reconciliation Revenues</b>	$R_{ER} = R_{Ee} - R_{Ea}$
<b>Reference Month Expected Energy Charge Revenue Stability Adjustment Factor Revenues</b>	$R_{Ee}$

<b>Reference Month Actual Energy Charge Revenue Stability Adjustment Factor Revenues</b>	$R_{Ea}$
<b>Billing Units for Billing Month</b>	$U_{kWh}$
<b>And Where,</b>	
<b>Base Target Revenues per Customer</b>	$R_{EB} = R_{E(TestYear)} \div U_{E(TestYear)}$
<b>And where,</b>	
<b>Test Year Demand Revenues</b>	$R_{E(TestYear)}$
<b>Test Year Demand Billing Units</b>	$U_{E(TestYear)}$
<b>And where,</b>	
<b>Energy Charge K Factor</b>	$K_{e(t)} = (R_{EB} \div R_{EP})^T$
<b>And where,</b>	
<b>Energy Revenues per Customer for the twelve months prior to the test year</b>	$R_{EP}$
<b>Number of years elapsed after test year</b>	$T$

4.4. The Energy Charge Revenue Stability Adjustment Factor shall be added to or subtracted from the energy charge rate for the applicable rate class for the billing month.

## 5. Monthly Filing

A Revenue Stability Adjustment Factor Reconciliation shall be filed monthly with the Public Service Commission (Commission) and become part of the Company's approved rates and tariffs, subject to any other rules and procedures of the Commission.

### Section 3 –Model Revenue Stability Reconciliation Form

<b>Demand Charge Revenue Stability Adjustment Factor</b>	
<b>Computation of Target Revenues Per Customer</b>	
Filing Month:	
Reference Month:	
Billing Month:	
Test Year Demand Revenues for Reference Month ( $R_{D(\text{Test Year})}$ )	
Test Year Customers for Reference Month ( $C_{(\text{TestYear})}$ )	
Test Year Demand Revenues per Customer ( $R_{DB}$ )	
Test Year Tariff	
Reference Month Tariff	
Adjustment Ratio	
<b>Adjusted Target Demand Revenues Per Customer</b>	
<b>Derivation of K Factor (<math>K_{d(t)}</math>)</b>	
Demand Revenues for Year Prior to Test Year $R_{DP}$	
Customers for Year Prior to Test Year	
Per Customer Value for Year Prior to Test Year	
Test Year Demand Revenues	
Test Year Customers	
Test Year Units per Customer	
Test Year to Pre-Test Year Ratio	
Number of Years Since Test Year	
<b>Demand Charge K Factor</b>	
<b>Current Period Revenue Adjustment</b>	
Allowed Revenue Per Customer	
Number of Reference Month Customers	
Allowed Reference Month Revenues	
Actual Reference Month Revenues	
<b>Current Period Shortfall/(Overage)</b>	
<b>Prior Period Reconciliation</b>	
Actual Adjustment Factor Revenues Collected in Reference Month	
Expected Reference Month Adjustment Factor Revenues	
Prior Period Adjustment Factor Revenues Shortfall/(Overage)	
Revenue Shortfall/(Overage)	
<b>Revenue Shortfall/(Overage)</b>	
<b>Adjustment Factor Calculation</b>	
Expected Billing Units for Billing Month	
<b>Demand Charge Revenue Stability Adjustment Factor</b>	

### Section 3 –Model Revenue Stability Reconciliation Form

<b>Energy Charge Revenue Stability Adjustment Factor</b>	
<b>Computation of Target Revenues Per Customer</b>	
Filing Month:	
Reference Month:	
Billing Month:	
Test Year Energy Revenues for Reference Month) ( $R_{E(\text{Test Year})}$ )	
Test Year Customers for Reference Month ( $C_{(\text{TestYear})}$ )	
Text Year Energy Revenues per Customer	
Test Year Tariff	
Reference Month Tariff	
Adjustment Ratio	
<b>Adjusted Target Energy Revenues Per Customer (<math>R_{EB}</math>)</b>	
<b>Derivation of K Factor (<math>K_{e(t)}</math>)</b>	
Energy Revenues for Year Prior to Test Year $R_{EP}$	
Customers for Year Prior to Test Year	
Per Customer Value for Year Prior to Test Year	
Test Year Energy Revenues	
Test Year Customers	
Per Customer Value for Test Year	
Test Year to Pre-Test Year Ratio	
Number of Years Since Test Year	
<b>Energy Charge K Factor (<math>K_e</math>)</b>	
<b>Current Period Revenue Adjustment</b>	
Allowed Revenue Per Customer	
Number of Reference Month Customers	
Allowed Reference Month Revenues	
Actual Reference Month Revenues	
<b>Current Period Revenue Shortfall/(Overage)</b>	
<b>Prior Period Reconciliation</b>	
Actual Adjustment Factor Revenues Collected in Reference Month	
Expected Reference Month Adjustment Factor Revenues	
Prior Period Adjustment Factor Revenues Shortfall/(Overage)	
<b>Revenue Shortfall/(Overage)</b>	
<b>Adjustment Factor Calculation</b>	
Expected Billing Units for Billing Month	
<b>Energy Charge Revenue Stability Adjustment Factor</b>	

#### Section 4 – Sample Completed Revenue Stability Reconciliation Form

<b>Demand Charge Revenue Stability Adjustment Factor</b>	
<b>Computation of Target Revenues Per Customer</b>	
Filing Month: December	
Reference Month: October	
Billing Month: February	
Test Year Demand Revenues for Reference Month ( $R_{D(\text{Test Year})}$ )	\$1,715,978
Test Year Customers for Reference Month ( $C_{(\text{TestYear})}$ )	955
Test Year Demand Revenues per Customer ( $R_{DB}$ )	\$1,797.7771
Test Year Tariff	\$1.75000
Reference Month Tariff	\$2.48600
Adjustment Ratio	1.42057
<b>Adjusted Target Demand Revenues Per Customer</b>	<b>\$2,553.8708</b>
<b>Derivation of K Factor (<math>K_{d(t)}</math>)</b>	
Demand Revenues for Year Prior to Test Year $R_{DP}$	\$19,733,215.25
Customers for Year Prior to Test Year	11,041
Per Customer Value for Year Prior to Test Year	\$1,787.27
Test Year Demand Revenues	\$20,538,096
Test Year Customers	11,523
Test Year Units per Customer	\$1,782.36
Test Year to Pre-Test Year Ratio	0.997253
Number of Years Since Test Year	1
<b>Demand Charge K Factor</b>	<b>0.997252605</b>
<b>Current Period Revenue Adjustment</b>	
Allowed Revenue Per Customer	\$2,546.8543
Number of Reference Month Customers	950.00
Allowed Reference Month Revenues	\$2,419,512
Actual Reference Month Revenues	\$2,489,105
<b>Current Period Shortfall/(Overage)</b>	<b>\$(69,593)</b>
<b>Prior Period Reconciliation</b>	
Actual Adjustment Factor Revenues Collected in Reference Month	
Expected Reference Month Adjustment Factor Revenues	
Prior Period Adjustment Factor Revenues Shortfall/(Overage)	
Revenue Shortfall/(Overage)	
<b>Revenue Shortfall/(Overage)</b>	<b>\$(69,593)</b>
<b>Adjustment Factor Calculation</b>	
Expected Billing Units for Billing Month	978,929
<b>Demand Charge Revenue Stability Adjustment Factor</b>	<b>\$(0.071091)</b>



<b>Energy Charge Revenue Stability Adjustment Factor</b>	
<b>Computation of Target Revenues Per Customer</b>	
Filing Month: December	
Reference Month: October	
Billing Month: February	
Test Year Energy Revenues for Reference Month) ( $R_{E(\text{Test Year})}$ )	36,638
Test Year Customers for Reference Month ( $C_{(\text{Test Year})}$ )	955
Text Year Energy Revenues per Customer	\$38.3847
Test Year Tariff	\$0.000080
Reference Month Tariff	\$0.000038
Adjustment Ratio	0.471739
<b>Adjusted Target Energy Revenues Per Customer (<math>R_{EB}</math>)</b>	<b>\$18.1076</b>
<b>Derivation of K Factor (<math>K_{e(t)}</math>)</b>	
Energy Revenues for Year Prior to Test Year $R_{EP}$	\$5,260,969,638
Customers for Year Prior to Test Year	11,041
Per Customer Value for Year Prior to Test Year	\$476,493.94
Test Year Energy Revenues	\$5,425,743,721
Test Year Customers	11,523
Per Customer Value for Test Year	\$470,862.08
Test Year to Pre-Test Year Ratio	0.988181
Number of Years Since Test Year	1
<b>Energy Charge K Factor (<math>K_e</math>)</b>	<b>0.988181</b>
<b>Current Period Revenue Adjustment</b>	
Allowed Revenue Per Customer	\$17.8935
Number of Reference Month Customers	950
Allowed Reference Month Revenues	\$16,999
Actual Reference Month Revenues	17,658
<b>Current Period Revenue Shortfall/(Overage)</b>	<b>(659)</b>
<b>Prior Period Reconciliation</b>	
Actual Adjustment Factor Revenues Collected in Reference Month	
Expected Reference Month Adjustment Factor Revenues	
Prior Period Adjustment Factor Revenues Shortfall/(Overage)	
<b>Revenue Shortfall/(Overage)</b>	<b>(659)</b>
<b>Adjustment Factor Calculation</b>	
Expected Billing Units for Billing Month	462,549,892
<b>Energy Charge Revenue Stability Adjustment Factor</b>	<b>\$(0.000001)</b>