# Borough of Ephrata
# Electric Department

# Financial Review, Allocated Cost of Service Analysis
# And
# Retail Rate Review

***December 8, 2014***

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Engineers and Consultants

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***Executive Summary***

## Introduction

GDS Associates, Inc. ("GDS") has performed a financial review, allocated cost of service analysis, and retail rate review for the Borough of Ephrata Electric Department ("Ephrata", or the "Borough", or the "Utility") as a joint effort with the Borough's management. Ephrata desired that the study also address the following specific objectives:

(1) Balance reduced rates and cost of service results –Better align rate levels with the cost to provide service, but also implement some level of rate reduction for each rate class.
(2) Unbundle the rates – Establish a separate $/kWh charge and other charges so as to create a basis of comparability with other Pennsylvania energy suppliers.
(3) Implement demand charges –Implement new demand charges for larger commercial and industrial customers that currently are billed on a $/kWh basis.
(4) Long-term rate adequacy – Ensure revised rates provide adequate revenue for the period of 2015 – 2017.
(5) Net Metering – Examine the energy crediting mechanism and the purchase price elements of the present net metering arrangements.

## Financial Review

The objective of this first phase of the project is to determine the magnitude of overall revenue required to attain Ephrata's financial objectives and maintain a sound financial position. The results of the financial review provide two primary results summarized as follows and as demonstrated in Exhibits 3 and 4.

(1) Due to reductions in the costs of purchased power, GDS and Borough management propose a reduction in retail revenues of $1.22 million, or 7.14% beginning with the first billing cycle of 2015. No changes are recommended prior to 2015.
(2) The proposed rate levels are projected to produce revenues sufficient to meet all operating expenses, debt service requirements, and all desired levels of transfer to the Borough's General and Capital Reserve funds for the period 2015-2017.

**Allocated Cost of Service Analysis**

The cost of service analysis is conducted to determine the operating margins of each of the retail rate schedules. This analysis provides an equitable, cost-based approach in determining the revenue requirements and retail rate charges for the various rate schedules.

Exhibit 8 demonstrates the operating margin percentages for each rate class under present and proposed rates.

**Retail Rate Review**

Exhibit 8 also demonstrates the proposed revenue level revisions to the Borough's present retail rate schedules. The Borough achieves one of its primary objectives of implementing reduced rates for each rate class while also being more cost based. Generally, the rate classes with the higher operating margins under present rates receive rate level reductions that are greater than average, and rate classes with the relatively lower operating margins under present rates receive rate level reductions that are less than average.

The following is a summary of the rate structure revisions that are generally applicable to all or several rate classes.

(1) Customer charges have been increased in a gradual manner to:
   a. Reflect cost of service results
   b. Provide increased revenue stability
   c. Recover the costs of Borough-owned lighting

(2) All of the revised rates have been developed to include the 2015 base power cost level of $0.08227/kWh-sold. The Power Cost Adjustment ("PCA") will be administered to recover the differences (plus or minus) between Ephrata's actual power cost as determined by the PCA formula, and the base power cost.

(3) The Borough will recognize the cost differences in providing single-phase versus three-phase service by implementing an adder when three-phase service is provided to customers under the Residential, General Service or General Service-Total Electric rate classes.

Residential Rate - Exhibits 11 and 12 are provided to demonstrate the present and proposed rate for the Residential Rate Class., as well as the proposed rate's comparability to the PPL rate for residential customers.

Other Rates - The Borough's other retail rates have been unbundled in a similar manner. The revisions to the other rates are demonstrated in Exhibits 13 through 16.

Rate transfer for large customers under the Total Electric Rate - It is recommended that 15 larger accounts presently taking service under the GS-Total Electric Rate be transferred to the General Service C&I Large Total Electric. The transfer is recommended due to the fact that the load characteristics of these 15 accounts are more similar to the load characteristics of customers served under the GS-Large Rate than the smaller customers served under the GS-Total Electric Rate.

New Demand Charge - In an effort to provide a rate structure that can more accurately recover costs consistent in the manner in which they are incurred, the Borough is introducing a new demand charge component to the GS-Large Rate and to the Large Primary Rate. (See Exhibits 15 and 16). The proposed demand charge is used to recover a portion of the distribution related costs incurred by the Borough to provide service to the customer. The remaining distribution costs are recovered by the distribution energy charges.

**Net Metering**

The Borough proposes two revisions to the net metering arrangements:

(1) The customer's generated energy will not reduce the Distribution-related energy charge portion of the rate structure.

(2) The year-end crediting mechanism for excess generation will be based upon the avoided cost of purchased power of $0.08227/kWh rather than the lowest cost block in the customer's retail rate.

***Introduction***

The following discussion and exhibits comprise the analyses, findings and recommendations regarding the financial review, allocated cost of service analysis, and retail rate review for the Borough of Ephrata Electric Department ("Ephrata", or the "Borough", or the "Utility") performed as a joint effort of GDS Associates, Inc. ("GDS") and the Borough's management. This discussion consists of four major sections. The first section reviews the overall financial position of the Borough and examines the total revenue requirements. The second section addresses the allocated cost of service analysis which evaluates the revenues produced by each rate class in light of the costs incurred to serve each rate class, thereby developing an estimated revenue requirement for each rate class. The third section reviews the present and revised retail rate schedules based on the financial review and cost of service analysis results. The fourth section contains a discussion of present and proposed net metering arrangements.

In addition to the more "standard" scope of services included in a cost of service and rate design project as described above, Ephrata desired that the GDS study address the specific objectives described below.

(1) Balance reduced rates and cost of service results – Due to lower cost power supply arrangements, Ephrata is implementing reduced retail rates. While one objective of the rate study is to ensure better alignment of rate levels with the cost to provide service, the Borough also desires to implement some level of rate reduction for each rate class.

(2) Unbundle the rates – The energy cost portion of each rate should be established as a separate $/kWh charge so as to create a basis of comparability with energy suppliers that provide service in the Pennsylvania customer choice environment. The revised rates also break out customer related and distribution related costs.

(3) Implement demand charges –Ephrata currently bills all of its customers on a $/kWh basis, with no $/kW demand charges. The Borough desires to implement demand charges for commercial and industrial customers that meet a certain service level threshold. Monthly peak demand information is currently being collected by Ephrata has provided the source data for development of the demand charges.

(4) Long-term rate adequacy – The adequacy of the rate will be examined for not only the adjusted test year, but also for the period of 2015 – 2017. GDS has prepared pro forma

income statements for the period of analysis so that the Borough has a full understanding of the long-term adequacy of the proposed rate levels.

(5) Net Metering – Ephrata has net metering arrangements in place for about seven accounts with customer-owned generation. The Borough requested the energy crediting mechanism and the purchase price elements of the net metering arrangements be examined.

***Financial Review***

The objective of this first phase of the project is to determine the magnitude of overall revenue required to attain Ephrata's financial objectives and maintain a sound financial position, including the recovery of margins adequate to provide for the desired level of transfers to the Borough's General and Capital Reserve funds.

The financial review performed to evaluate the overall financial adequacy of existing retail rate charges is based upon a 12-month test period ending December 31, 2012. As shown in Exhibit 1, the actual revenues and expenses booked for that test period indicate that the Borough realized total margins, after transfers, of $60,178.

EXHIBIT 1: 2012 TEST YEAR INCOME STATEMENT

| Item | Per Books Amount |
|---|---|
| (a) | (b) |
| **Operating Revenues** | |
| Base | $17,088,360 |
| PCA | $0 |
| Other | $195,952 |
| Total Operating Revenues | $17,284,312 |
| **Operating Expenses** | |
| Purchased Power | $12,986,778 |
| Operating Expense | $2,274,514 |
| Total Operating Expenses | $15,261,291 |
| **Operating Margins** | $2,023,021 |
| **Non-Operating Margins** | |
| Interest and Other | $30,281 |
| Transfers to General Fund | ($1,414,762) |
| Transfers to Cap. Reserve Fund | ($500,000) |
| Transfers to Mob. Equip. Fund | ($78,362) |
| Total Non-Operating Margin | ($1,962,843) |
| **Total Margins** | $60,178 |
| **Debt Service Coverage** | **12.28** |

To determine the revenue requirement for ratemaking purposes, several adjustments were made to the actual 2012 revenues and expenses, as shown in column (c) of Exhibit 2. Such adjustments are made to exclude abnormal or non-recurring items, and to incorporate known and measurable changes in the revenues and expenses. The overall purpose of these adjustments is to enable the test period to reflect a typical on-going financial position for the Borough. Because the revised rates will become effective with the first billing cycle after January 1, 2015, both power supply and distribution expenses and fund transfer amounts were adjusted to projected 2015 levels. No changes are recommended prior to 2015.

Most notably, power cost is reflective of the reduced cost levels projected costs for 2015. Due to the expiration of high cost energy block purchases and their replacement with lower block purchases, Ephrata's will experience significantly lower power cost in 2015 and beyond, compared to the 2012 test year. See Exhibit 2 for power cost reductions.

EXHIBIT 2: ADJUSTMENTS TO 2012 TEST YEAR POWER COST

| Item | Test Year | Adjustments | Adjusted Test Year |
|---|---|---|---|
| (a) | (b) | (c) | (d) |
| **Purchased Power Expenses** | | | |
| Energy Related | $10,366,887 | ($2,337,637) | $8,029,250 |
| Demand Related | $1,851,700 | ($448,249) | $1,403,451 |
| Transmission Related | $768,190 | $462,391 | $1,230,582 |
| Total Purchased Power Expenses | $12,986,778 | ($2,323,495) | $10,663,283 |

The distribution and power supply adjustments are demonstrated in the Adjusted Income Statement in Exhibit 3.

Exhibit 3 also includes the proposed reduction in retail revenues of $1.22 million, or 7.1%. Even with the revenue reduction, GDS and Borough management conclude that the proposed rate levels produce revenues sufficient to meet all operating expenses, debt service requirements, and all desired levels of transfer to the Borough's funds.

EXHIBIT 3: ADJUSTED 2012 INCOME STATEMENT

| Item | Per Books Amount | Adjustments | Adjusted Test Year | Proposed Change | Pro Forma |
|---|---|---|---|---|---|
| (a) | (b) | (c) | (d) | (e) | (f) |
| **Operating Revenues** | | | | | |
| Base | $17,088,360 | $44,828 | $17,133,188 | ($1,223,194) | $15,909,994 |
| PCA | $0 | $0 | $0 | $0 | $0 |
| Other | $195,952 | $0 | $195,952 | $0 | $195,952 |
| Total Operating Revenues | $17,284,312 | $44,828 | $17,329,140 | ($1,223,194) | $16,105,946 |
| **Operating Expenses** | | | | | |
| Purchased Power | $12,986,778 | ($2,323,495) | $10,663,283 | $0 | $10,663,283 |
| Operating Expense | $2,274,514 | $154,204 | $2,428,717 | $0 | $2,428,717 |
| Total Operating Expenses | $15,261,291 | ($2,169,291) | $13,092,000 | $0 | $13,092,000 |
| **Operating Margins** | $2,023,021 | | $4,237,140 | | $3,013,946 |
| **Non-Operating Margins** | | | | | |
| Interest and Other | $30,281 | $0 | $30,281 | $0 | $30,281 |
| Transfers to General Fund | ($1,414,762) | ($35,369) | ($1,450,131) | $0 | ($1,450,131) |
| Transfers to Cap. Reserve Fund | ($500,000) | ($750,000) | ($1,250,000) | $0 | ($1,250,000) |
| Transfers to Mob. Equip. Fund | ($78,362) | ($1,959) | ($80,321) | $0 | ($80,321) |
| Total Non-Operating Margin | ($1,962,843) | | ($2,750,171) | $0 | ($2,750,171) |
| **Total Margins** | $60,178 | | $1,486,969 | | $263,775 |
| **Debt Service Coverage** | **12.28** | | **17.27** | | **12.61** |

2015-2017 analysis

To ensure that reduced rate levels will produce adequate revenues for the foreseeable future, the Borough and GDS projected revenue requirements for the period 2015-2017.

As shown in Exhibit 4, the revised rate levels are also projected to produce revenues sufficient to meet operating expenses, provide for transfers to Borough funds, and meet debt service requirements for the three-year period

EXHIBIT 4: 2015 – 2017 FINANCIAL FORECAST

| Item | 2015 Pro Forma | 2016 | 2017 |
|---|---|---|---|
| (a) | (b) | (c) | (d) |
| **Operating Revenues** | | | |
| Base | $15,909,994 | $16,690,778 | $16,845,521 |
| PCA | $0 | $161,236 | $495,727 |
| Other | $195,952 | $195,952 | $195,952 |
| Total Operating Revenues | $16,105,946 | $17,047,966 | $17,537,200 |
| **Operating Expenses** | | | |
| Purchased Power | $10,663,283 | $11,302,950 | $11,740,737 |
| Operating Expense | $2,428,717 | $2,378,535 | $2,420,430 |
| Total Operating Expenses | $13,092,000 | $13,681,485 | $14,161,168 |
| **Operating Margins** | $3,013,946 | $3,366,481 | $3,376,032 |
| **Non-Operating Margins** | | | |
| Interest and Other | $30,281 | $30,281 | $30,281 |
| Transfers to General Fund | ($1,450,131) | ($1,486,384) | ($1,523,544) |
| Transfers to Cap. Reserve Fund | ($1,250,000) | ($1,250,000) | ($1,000,000) |
| Transfers to Mob. Equip. Fund | ($80,321) | ($80,321) | ($80,321) |
| Total Non-Operating Margin | ($2,750,171) | ($2,786,424) | ($2,573,584) |
| **Total Margins** | $263,775 | $580,057 | $802,449 |
| **Debt Service Coverage** | **12.28** | **20.84** | **20.89** |

***Allocated Cost of Service Analysis***

The cost of service analysis is conducted to determine the adequacy of the revenues produced by each of the retail rate schedules in light of the cost of providing service to the customers served under those rate schedules. This analysis provides a more equitable, cost-based approach in determining the revenue requirements and retail rate charges for the various rate schedules.

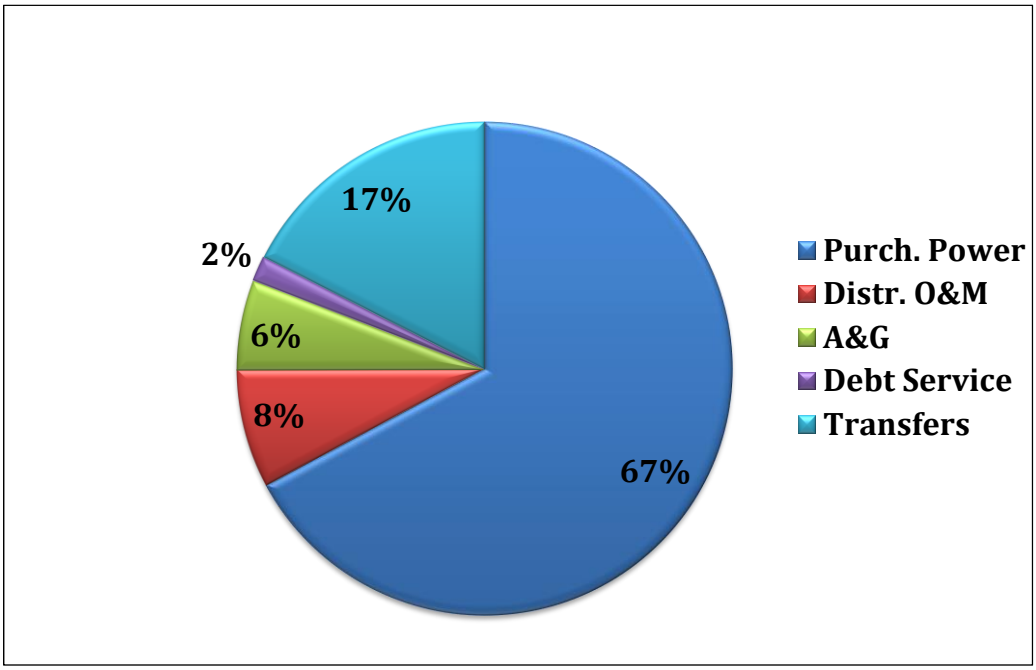
The techniques and procedures used by GDS to perform the cost allocation for the Borough generally follow the guidelines set forth in the Cost Allocation Manual prepared by the National Association of Regulatory Utility Commissioners ("NARUC"). The NARUC cost allocation principles are widely considered as an industry standard. The Manual provides a range of acceptable cost allocation methods, and GDS used the methods that are most appropriate for the Borough.

The process consists of three basic steps: functionalization, classification, and allocation. Typically, these steps utilize utility plant information. Since the Borough does not have utility plant accounting records, the process used results from other cost of service studies for similarly situated utilities where plant data is required for the analysis.

Functionalization is accomplished by categorizing the Borough's operating expenses into production, transmission, distribution, and general functions. Exhibit 5 demonstrates the functionalized electric utility costs of the Borough.

The classification step separates the distribution operating expenses into demand-related and customer-related components. Purchased power costs were classified as either demand-related or energy-related.

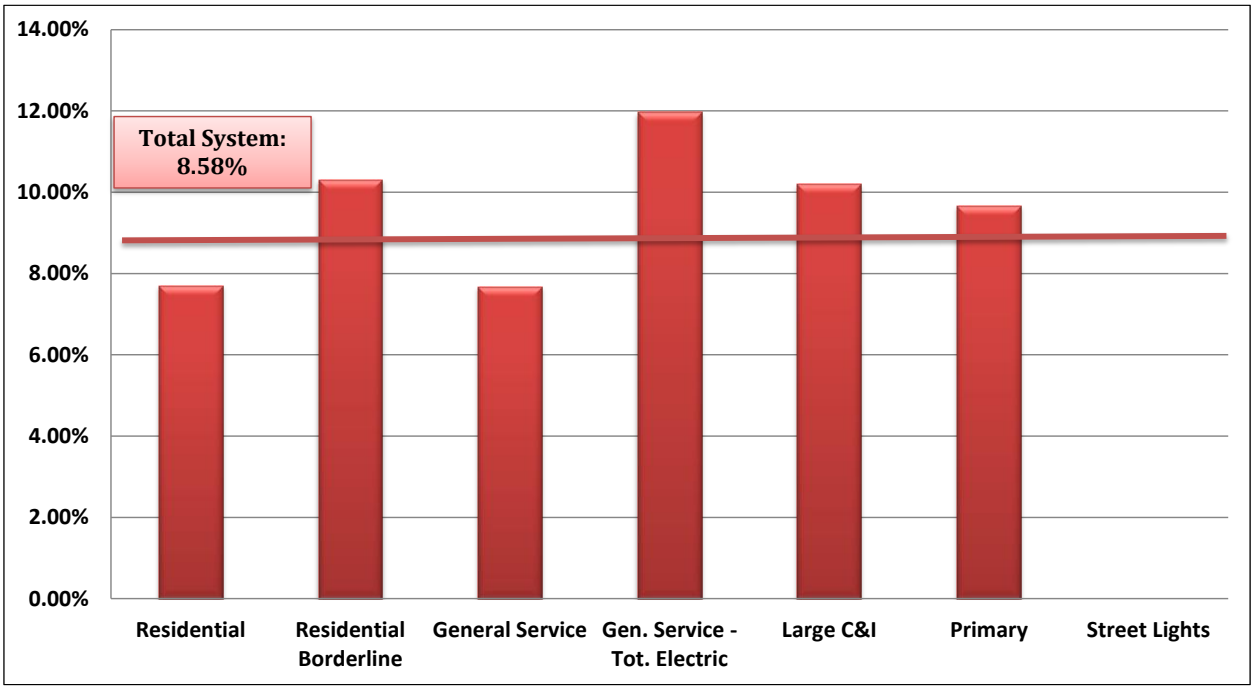
EXHIBIT 5: BREAKOUT OF EXPENSES




The allocation step consists of spreading the classified expenses to the various rate classes based on appropriate customer and usage characteristics for those rate classes, such as number of customers, energy consumption, and peak demand responsibility.

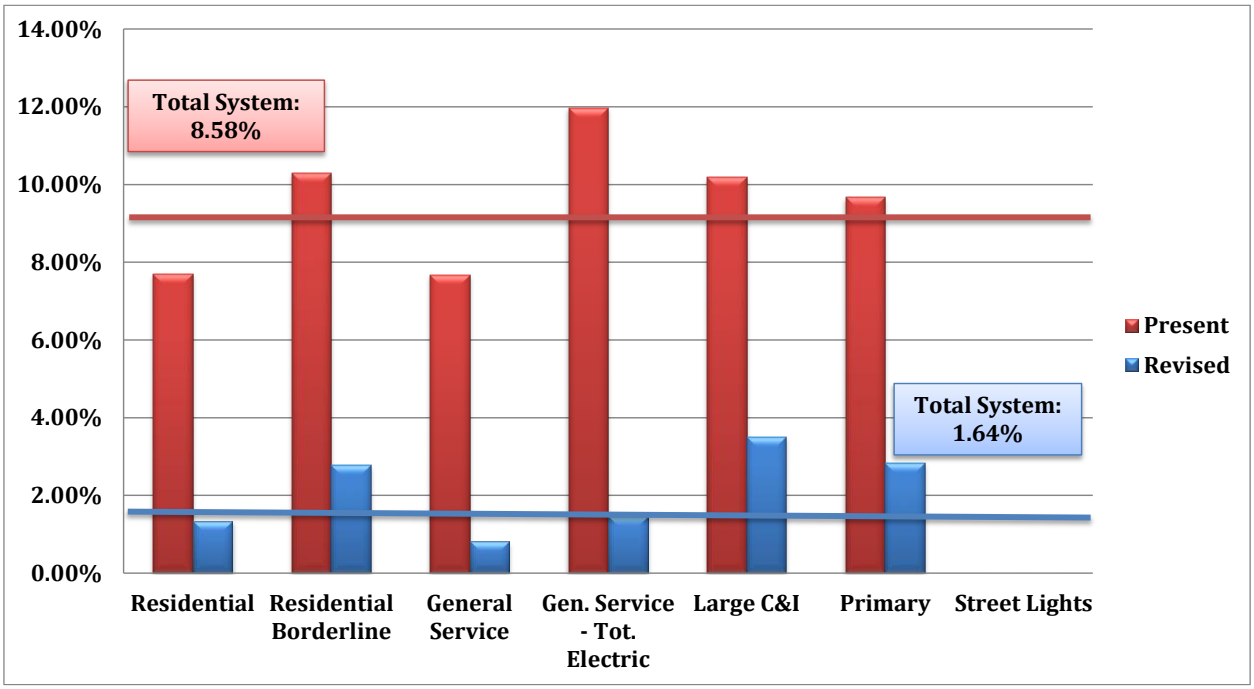
The results of the cost of service analysis under the present rates are summarized in Exhibit 6. The differences in operating margins among the rate classes under the present rates are not atypical or unusual, compared to other utilities.

EXHIBIT 6: TOTAL MARGINS – PRESENT RATES ADJUSTED TEST YEAR




A summary of cost of service results for revised rates are shown in Exhibit 7. As demonstrated in the Exhibit, there is less dispersion of the operating margin percentages between rate classes. This occurs due to the Borough's objective of implementing rates are cost based. Generally, the rate classes with the higher operating margins under present rates receive rate level reductions that are greater than average, and rate classes with the relatively lower operating margins under present rates receive rate level reductions that are less than average. With this approach to establishing the revenue levels, Ephrata achieves more equitable cost recovery. The rate level changes are demonstrated in Exhibit 8.

EXHIBIT 7: TOTAL MARGINS– PRESENT AND REVISED RATES




One of the other cost of service results is a unit cost summary, which summarizes the per-unit cost of each functional cost category for each rate class. Such costs are considered in the development of retail rate charges.

***Retail Rate Review***

***General***

Overall and Rate Class Revenue Level Changes - The following is a summary of the proposed revisions to the Borough's present retail rate schedules. As previously mentioned, the retail rates have been developed to produce aggregate annual revenue sufficient to satisfy the Borough's overall revenue requirements, including an adequate operating margin, transfers, and DSC levels. The recommended overall revenue level reduction is 7.14%. The recommended percent change in revenue for each of the rate classes is shown in Exhibit 8.

EXHIBIT 8: RATE REDUCTIONS BY CLASS

| Class | Adjusted Actual Margin | Revised Margin | Rate Reduction |
|---|---|---|---|
| (a) | (b) | (c) | (d) |
| Residential | 7.70% | 1.35% | -6.52% |
| Residential Borderline | 10.30% | 2.78% | -7.82% |
| General Service | 7.68% | 0.82% | -7.00% |
| Gen. Service - Tot. Electric | 11.97% | 1.47% | -7.67% |
| 15 Transfers from Tot. Elec to Large C&I | N/A | N/A | -12.69% |
| Large C&I | 10.19% | 3.50% | -8.00% |
| Primary | 9.67% | 2.83% | -7.10% |
| **Borough Total** | **8.58%** | **1.64%** | **-7.14%** |

Rate Unbundling - One the primary objectives of the Borough is to unbundle the retail rate charges so as to create a basis of comparability with energy suppliers that provide service in the Pennsylvania customer choice environment. The recommended rates have been unbundled to meet this objective. Each of the revised rates has separate, cost-based charges for the categories of customer, distribution, and energy (power supply).

Customer-related costs are that portion of distribution costs associated with the facilities and services required to provide a minimum level of service to the customer. (The customer charges also include the recovery of costs related to Borough-owned outdoor lighting). The distribution charges recover the remaining portion of the Borough's distribution-related costs that are not recovered by the monthly customer charge. The energy charge (or

energy and demand charges for larger commercial and industrial accounts) recovers the costs of production-related capacity and energy, transmission, as well as other market related power costs.

Customer Charges - The monthly customer charges for each of the rate classes have been increased. Exhibit 9 below summarizes the increase for each of the rate classes. There are three primary reasons for the increase.

1. The increase is consistent with the Borough's fixed, customer related costs of providing basic service to its customers as identified by the cost of service.
2. The charges include recovery of the Borough's outdoor lighting costs.
3. The increase provides some increased revenue stability to the Borough since cost recovery is shifted from load-based (kWh) charges that fluctuate due to weather conditions to a fixed monthly charge that provides revenue not tied to electric load.

It should be noted that the cost of service results, specifically the monthly costs of providing basic service, are a primary consideration in the determination of the revised customer charges. For some rate classes, use of the cost of service results would have resulted in too large of an increase in the monthly customer charge. In those cases, the customer charge was increased in a gradual manner. Consistent with the cost-based approach used to develop the unbundled charges, the remaining portion of distribution related costs not recovered by the customer charge are recovered by distribution energy and demand charges, as applicable to each rate schedule.

EXHIBIT 9: CUSTOMER CHARGE SUMMARY

| Class | Present Customer Charge | Revised Customer Charge |
|---|---|---|
| (a) | (b) | (c) |
| Residential | $9.00 | $12.00 |
| Residential Borderline | $23.35 | $25.85 |
| General Service | $15.00 | $21.75 |
| Gen. Service - Tot. Electric | $50.00 | $52.50 |
| 15 Transfers from Tot. Elec to Large C&I | $50.00 | $110.00 |
| Large C&I | $100.00 | $110.00 |
| Primary | $100.00 | $135.00 |

Power Cost Adjustment ("PCA") - The Borough implemented a PCA provision in 2013. All of the revised rates have been developed to include the level of power cost that is projected for the year 2015 ("base" power cost). Stated on a per kWh-sold basis, the base power cost included in the revised rates is $0.08227/kWh. Beginning with the implementation of the revised rates, the PCA will be administered to recover the differences (plus or minus) between Ephrata's actual power cost as determined by the PCA formula, and the base power cost. In the event that actual power cost is equal to the base power cost, then the billed PCA factor would be zero.

Single-Phase and Three-Phase Service - Within any of the present rate schedules, the Borough does not recognize the cost differences in providing single-phase versus three-phase service. However, there can be significant differences in the cost of facilities required to provide the different levels of service, and it is common for utilities to establish an increased charge for three-phase service. For each of the Residential, General Service and General Service-Total Electric rate classes, GDS and Ephrata have developed estimates of the differences in single-phase and three-phase investment and associated carrying costs. For circumstances where the Borough provides three-phase service to customers under any of these rate classes, then it is recommended that a higher customer charge is billed. These incremental customer charges are shown below in Exhibit 10.

EXHIBIT 10: CUSTOMER CHARGE ADDER FOR THREE-PHASE SERVICE

| Class | Monthly Adder |
|---|---|
| (a) | (b) |
| Residential | $15.75 |
| General Service | $12.58 |
| Gen. Service - Tot. Electric | $22.00 |

Rate Classification – The Borough offers seven (7) different rate classifications, and will also recognize the cost difference in providing three-phase service, if the adder described above is adopted. GDS reviewed the offerings and concluded that the rate classifications established by the Borough are defensible and consistent with industry practices.

## Residential Service

The Borough bills the majority (approx. 5,800) of its customers under the Residential Rate Schedule. The rate is applicable to residential premises where the predominant use of electric energy is for domestic purposes. The present and proposed rates are shown in Exhibit 11.

EXHIBIT 11: RATE COMPARISON – RESIDENTIAL

| Item | Present Rates | Item | Revised Rates |
|---|---|---|---|
| (a) | (b) | (c) | (d) |
| **Customer Charge** | $9.00 | **Customer Charge** | $12.00 |
| **Energy Charges** | | **Distribution Charges** | |
| First 300 kWh | $0.1378 | First 300 kWh | $0.0390 |
| Next 700 kWh | $0.1228 | Next 700 kWh | $0.0240 |
| Over 1,000 kWh | $0.1178 | Over 1,000 kWh | $0.0190 |
| **PCA** | $0.0000 | **Energy Charge** | $0.0865 |
| | | **PCA** | $0.0000 |

Also of interest is the comparison between the proposed residential rate and the comparable rate for residential customers served by PPL Electric Utilities ("PPL"). Exhibit 12 compares the proposed rate with the PPL residential rate effective June 2014, as well as a bill comparison for 1,000 kWh of usage.

EXHIBIT 12: RATE AND BILLING COMPARISON – RESIDENTIAL VS. PPL

| Item | Revised Rates | Bill @ 1,000 kWh | Item | PPL | Bill @ 1,000 kWh |
|---|---|---|---|---|---|
| (a) | (b) | (c) | (d) | (e) | (f) |
| **Customer Charge** | $12.00 | $12.00 | **Customer Charge** | $14.12 | $14.12 |
| **Distribution Charges** | | | **Distribution Charges** | | |
| First 300 kWh | $0.0390 | $11.70 | First 300 kWh | $0.03231 | $9.69 |
| Next 700 kWh | $0.0240 | $16.80 | Next 700 kWh | $0.03231 | $22.62 |
| Over 1,000 kWh | $0.0190 | $0.00 | Over 1,000 kWh | $0.03231 | $0.00 |
| **Energy Charge** | $0.0865 | $86.50 | **Energy Charge** | $0.09036 | $90.36 |
| **PCA** | $0.0000 | $0.00 | **PCA** | N/A | $0.00 |
| | ***Total Bill*** | ***$127.00*** | | ***Total Bill*** | ***$136.79*** |

## General Service Commercial and Industrial

The Borough presently serves approximately 530 customers under the "GS" rate. These are commercial or industrial customers that typically use less than 15,000 kWh per month or have a demand of less than 41kw with a load factor of 50%. The present and proposed rates are shown in Exhibit 13.

EXHIBIT 13: RATE COMPARISON – GENERAL SERVICE

| Item | Present Rates | Item | Revised Rates |
|---|---|---|---|
| (a) | (b) | (c) | (d) |
| **Customer Charge** | $15.00 | **Customer Charge** | $21.75 |
| **Energy Charges** | | **Distribution Charges** | |
| First 1,500 kWh | $0.1608 | First 1,500 kWh | $0.0590 |
| Over 1,500 kWh | $0.1408 | Over 1,500 kWh | $0.0390 |
| **PCA** | $0.0000 | **Energy Charge** | $0.0850 |
| | | **PCA** | $0.0000 |

**General Service Commercial and Industrial – Total Electric**

The Borough offers a different rate for similar sized commercial or industrial customers as those billed under the "GS" rate, but the rate eligibility is limited to those customers that use electricity as the source of energy for space heating as well as water heating. There are presently approximately 170 customers served under the GS-Total Electric Rate. The present and proposed rates are shown in Exhibit 14.

EXHIBIT 14: RATE COMPARISON – GENERAL SERVICE – TOTAL ELECTRIC

| Item | Present Rates | Item | Revised Rates |
|---|---|---|---|
| (a) | (b) | (c) | (d) |
| **Customer Charge** | $50.00 | **Customer Charge** | $52.50 |
| **Energy Charges** | | **Distribution Charges** | |
| First 1,500 kWh | $0.1358 | First 1,500 kWh | $0.0460 |
| Over 1,500 kWh | $0.1258 | Over 1,500 kWh | $0.0360 |
| **PCA** | $0.0000 | **Energy Charge** | $0.0770 |
| | | **PCA** | $0.0000 |

During the course of the study it was identified that 15 customers presently taking service under the GS-Total Electric Rate typically use more than 15,000 kWh per month or

have a demand of greater than 41kw at 50% load factor. The Borough has installed demand meters on these 15 accounts. It is recommended that these 15 accounts receive the General Service C&I – Large Rate, which is discussed next. This recommendation is due to the fact that the load characteristics of these 15 accounts are more similar to the load characteristics of customers served under the General Service C&I– Large Rate than the smaller customers served under the GS-Total Electric Rate. In order to retain these 15 customers' designation as Total Electric, although their rate will be the same as those in the General Service C&I – Large Rate they will be designated in their own rate as General Service C&I Large Total Electric.

**General Service Commercial and Industrial – Large**

Ephrata presently serves approximately 70 accounts under GS-Large Rate. Following the transfer of the 15 accounts from GS-Total Electric, there will be approximately 85 accounts served under the rate. The rate is applicable to commercial and industrial customers taking service at a secondary voltage and whose usage is typically more than 15,000 kWh per month or have a demand greater than 41 kw with a load factor of 50%.

In an effort to provide a rate structure that can more accurately recover costs consistent in the manner in which they are incurred, the Borough is introducing a new demand charge component to the GS-Large Rate. It should also be noted that is a standard practice for utilities to have a demand component in the rate structure applicable to customers of this size. The monthly billing demand will be established as the highest 15-minute demand measured during each monthly billing period. Each monthly billing demand will stand on its own, i.e., there will be no ratchets, or "look-backs", to determine the monthly billing demand.

The proposed $4.25/kW-month billing demand used to recover a portion of the distribution related costs incurred by the Borough to provide service to the customer is similar to the demand charge in the GS-3 rate offered by PPL for comparably-sized commercial and industrial customers. The remaining distribution costs are recovered by the distribution energy charges.

The present and proposed rates are shown in Exhibit 15. The rate has been unbundled in a similar manner to the PPL GS-3 rate. With the introduction of the new demand charge, customer bill impacts are influenced by a customer's load factor – a customer with a higher load factor will have more a favorable bill impact than a customer with a lower load factor.

EXHIBIT 15: RATE COMPARISON – LARGE C&I and LARGE C&I Total Electric

| Item | Present Rates | Item | Revised Rates |
|---|---|---|---|
| (a) | (b) | (c) | (d) |
| **Customer Charge** | $100.00 | **Customer Charge** | $110.00 |
| **Demand Charge** | N/A | **Demand Charge** | $4.25 |
| **Energy Charges** | | **Distribution Charges** | |
| First 7,500 kWh | $0.1348 | First 7,500 kWh | $0.0270 |
| 7,500 to 25,000 kWh | $0.1208 | 7,500 to 25,000 kWh | $0.0240 |
| Over 25,000 kWh | $0.1158 | Over 25,000 kWh | $0.0200 |
| **PCA** | $0.0000 | **Energy Charges** | |
| | | Generation | $0.0693 |
| | | Transmission | $0.0081 |
| | | **PCA** | $0.0000 |

## Large Primary Rate

Ephrata has three commercial/industrial accounts billed under its LP Rate. This rate is applicable to those customers that own the transformation equipment at the point of delivery, thus, the Borough provides service at the high-side primary voltage.

The present and proposed rates are shown in Exhibit 16. Similar to the GS-Large rate, the structure of the proposed LP rate includes a new demand charge. Also, the rate has been unbundled in a comparable manner as the PPL LP-4 Rate.

EXHIBIT 16: RATE COMPARISON – LARGE PRIMARY

| Item | Present Rates | Item | Revised Rates |
|---|---|---|---|
| (a) | (b) | (c) | (d) |
| **Customer Charge** | $100.00 | **Customer Charge** | $135.00 |
| **Demand Charge** | N/A | **Demand Charge** | $3.00 |
| **Energy Charges** | | **Distribution Charges** | |
| First 15,000 kWh | $0.1308 | First 15,000 kWh | $0.0290 |
| 15,000 to 100,000 kWh | $0.1128 | 15,000 to 100,000 kWh | $0.0260 |
| Over 100,000 kWh | $0.1108 | Over 100,000 kWh | $0.0200 |
| **PCA** | $0.0000 | **Energy Charges** | |
| | | Generation | $0.0690 |
| | | Transmission | $0.0075 |
| | | **PCA** | $0.0000 |

***Net Metering***

Ephrata has net metering arrangements in place for about seven customers with owned generation. When a customer with owned generation generates electric energy, the generation first avoids retail purchases. Present net metering arrangements adopted by the Borough dictate that any generation in excess of energy requirements is accumulated monthly until the end of the year. Any accumulated amount of excess generation at the end of the year is credited to the customer at the lowest priced energy block in the applicable retail rate. This treatment of the generated energy reduces the customer's responsibility for both power supply related costs as well as for distribution costs. It is generally recognized that the utility's distribution costs do not change in a significant way when a customer installs and operates distributed generation; therefore the customer's avoidance of distribution related costs should be revised going forward.

The Borough proposes revisions to the net metering arrangements for new installations of customer-owned generation so that the net metering customer does not avoid distribution related costs. The combination of unbundling the rate structure and implementing revised energy accounting provide the basis of the revision.

Under the revised net metering arrangement for new installations, the customer's generated energy will continue to appropriately reduce the energy applicable to the power supply-related Energy Charge. However, net metering will not reduce the Distribution-related energy charge portion of the rate structure. Energy billing for the Distribution portion of the rate will be determined by adding the metering readings of the premises (reduced by the generation) to the readings of the separately metered generation to determine the total energy requirements of the premises. The calculated total energy requirements are then applied to the Distribution energy charge.

It is also recommended for new installations that Ephrata revise the year-end crediting mechanism. Rather than crediting the customer at the lowest priced energy block in the customer's applicable retail rate, it is recommended that the excess kWh generation be credited at both the $/kWh energy charge of the applicable retail rate and the $/kWh PCA charge or credit. The current method, with the use of a retail rate component as the basis of determining the customer credit includes some level of distribution cost. But, as noted above, customer self- generation does not avoid distribution cost and should not be included in the year-end crediting price.