

Volume 2B

Direct Testimony and Supporting Schedules:

David G. Prazak

Before the South Dakota Public Utilities Commission  
State of South Dakota

In the Matter of the Application of Otter Tail Power Company  
For Authority to Increase Rates for Electric Utility  
Service in South Dakota

Docket No. EL18-\_\_\_\_

Exhibit \_\_\_\_

**RATE DESIGN**

Direct Testimony and Schedules of

**DAVID G. PRAZAK**

April 20, 2018

## TABLE OF CONTENTS

I.	INTRODUCTION AND QUALIFICATIONS .....	1
II.	PURPOSE AND OVERVIEW OF DIRECT TESTIMONY .....	1
III.	RATE DESIGN PROCESS .....	2
	A. Overall Rate Structure Objectives .....	2
	B. Intra-Class Revenue Allocation .....	3
	1. 2018 Marginal Cost Study .....	4
	2. Proposed Intra-Class Revenue Allocation .....	7
	C. Development of Individual Rate Components.....	11
	1. Fixed Charges Defined .....	11
	2. Proposed Fixed Charges .....	13
IV.	INDIVIDUAL RATE PROPOSALS.....	20
	A. Residential Class .....	20
	B. Farm Class .....	23
	C. General Service Class .....	25
	D. Large General Service Class .....	30
	E. Irrigation Class.....	35
	F. Outdoor Lighting Class.....	37
	G. Other Public Authority Service Class .....	38
	H. Water Heating Service Class .....	42
	I. Controlled Service – Interruptible Class.....	43
	J. Deferred Load Service Class .....	48
	K. Mandatory and Voluntary Riders.....	51
V.	NEW RATE PROPOSALS .....	51
	A. Residential Time of Day .....	52
	B. Super LGS.....	57
	C. Economic Development Rider .....	60
	D. LED Street and Area Lighting – Dusk to Dawn .....	62
	E. Air Conditioning Rider .....	67
VI.	MERRICOURT WIND PROJECT STEP-IN RATES .....	68
VII.	OTHER TARIFF CHANGES.....	69
VIII.	CONCLUSION.....	71

## **ATTACHED SCHEDULES**

Schedule 1 – Statement of Qualifications and Experience

Schedule 2 – 2018 Marginal Cost Study

Schedule 3 – Summary of Proposed Class and Intra-Class Revenue Allocations

Schedule 4 – Marginal Cost Revenues and Proposed Allocations

Schedule 5 – Comparison of Customer Charges and Marginal Costs

Schedule 6 – Residential Customer Usage Analysis

Schedule 7 – Comparison of Current and Proposed Time of Day Pricing Periods

Schedule 8 – LED Outdoor Lighting Supporting Papers

Schedule 9 – Step-In Rate Proposal Intra-Class Revenue Allocations and Energy Charge Factors

Schedule 10 – Matrix of Tariff Changes

### **Other Sponsored Schedules**

Volume 3 – Proposed Legislative and Non-Legislative Tariff Sheets

**I. INTRODUCTION AND QUALIFICATIONS**

Q. PLEASE STATE YOUR NAME AND OCCUPATION.

A. My name is David G. Prazak. I am employed by Otter Tail Power Company (OTP) as its Supervisor of Pricing and Tariff Administration.

Q. PLEASE SUMMARIZE YOUR QUALIFICATIONS AND EXPERIENCE.

A. I have over 27 years of experience in the energy industry and over 20 years of experience in the Regulatory Administration Department in Pricing and Rate Design. My current duties include managing the design and implementation of retail pricing strategies for rate schedule and contract pricing, including rates and rate design and tariff administration. My qualifications and experience are more fully described on Exhibit\_\_\_(DGP-1), Schedule 1.

**II. PURPOSE AND OVERVIEW OF DIRECT TESTIMONY**

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

A. The purpose of my Direct Testimony is to: (1) describe the rate structure objectives that were used in developing OTP's proposed rates; (2) explain the role of marginal costs in OTP's rate design; (3) describe the proposed rate design for OTP's rate schedules and riders; (4) introduce new rate designs; (5) describe the proposed rate design associated with OTP's step-in rate proposal and (6) support the proposed language changes of OTP's rate schedule provisions.

Q. PLEASE PROVIDE A BRIEF OVERVIEW OF YOUR DIRECT TESTIMONY.

A. OTP's rate design provides a reasonable opportunity to achieve OTP's revenue requirement. The rate design is based on marginal costs, and as such, promotes efficient use of resources.

1 Q. HOW IS YOUR DIRECT TESTIMONY ORGANIZED?

2 A. In Section III, I discuss OTP's rate design process, including the objectives that guide our  
3 rate design, the role of marginal costs in rate design and OTP's fixed charge proposals. In  
4 Section IV, I identify our rate design proposals for each customer class. Section V  
5 identifies new rate proposals. Section VI addresses the rate design associated with OTP's  
6 step-in rate proposal. Section VII identifies other tariff changes. Section VIII provides my  
7 conclusion.  
8

9 Q. WHEN DOES OTP PROPOSE FINAL RATES TAKE EFFECT?

10 A. OTP has identified, and included on proposed tariff sheets for final rates, January 1, 2019  
11 as the estimated effective date for final rates, however, that date could be earlier or later  
12 dependent upon the timing and substance of the Commission's determinations in this  
13 case.

### 14 **III. RATE DESIGN PROCESS**

#### 15 **A. Overall Rate Structure Objectives**

16 Q. WHAT ARE THE RATE STRUCTURE OBJECTIVES THAT GUIDE OTP'S RATE  
17 DESIGN?

18 A. OTP identified the following rate structure objectives:

- 19 • The rate design should give OTP a reasonable opportunity to achieve its revenue  
20 requirement. This implies rate structures that follow OTP's marginal cost  
21 structure, thereby allowing revenues to track costs.
- 22 • The rate design should promote efficient use of resources. This implies giving  
23 consumers price signals that reflect marginal costs, including seasonal differences  
24 and, where reasonably possible, time-of-day (TOD) differences.
- 25 • Rate design changes should be gradual where necessary to avoid abrupt bill  
26 impacts.
- 27 • The rate design should be based on structures that are reasonable and  
28 nondiscriminatory. This includes minimizing cross-subsidies within rate classes to  
29 the extent reasonably possible.

- The rate design should result in rates that are administratively feasible. This includes taking metering and billing system constraints into account and avoiding unnecessary complexity that might confuse customers.
- The rate design should preserve the attractiveness of load control/interruptible riders as those riders provide substantial benefits to all OTP customers.

**B. Intra-Class Revenue Allocation**

Q. PLEASE SUMMARIZE THIS PORTION OF YOUR DIRECT TESTIMONY.

A. This portion of my Direct Testimony makes two main points:

- Consistent with OTP's rate design objectives, I based our rate structures on the structure of OTP's marginal costs, tempered by the need to control bill impacts and maintain a suitable inter- and intra-class relationship between the regular rates and riders available to OTP's customers.
- The proposed intra-class revenue requirement allocation was determined by applying the Equal Percentage Marginal Cost (EPMC) methodology, where applicable. The EPMC methodology follows our rate structure objectives by improving the efficiency of price signals and reducing cross-subsidies.

Q. WHAT IS THE STARTING POINT FOR THE RATE DESIGN?

A. The rate design begins with the marginal cost study and its application to the rate design process. The first step in that process is to allocate to rate classes the class revenue responsibilities developed by OTP Witness Mr. Bryce C. Haugen, as described in his Direct Testimony. This is done using the EPMC methodology. I then develop the individual rate components (energy, demand, fixed) for each rate class, based on marginal costs, which are designed to recover the overall revenue requirement.

Q. HOW ARE MARGINAL COSTS USED IN THE RATE DESIGN PROCESS?

A. Marginal costs are used in the process of allocating class revenue responsibilities to rate classes and in the development of individual rate components. I describe the allocation of class revenue responsibilities to rate classes in this Section of my Direct Testimony, and I focus on the development of individual rate components further in this section and in Section IV, below.

1 Q. DOES OTP USE BOTH EMBEDDED AND MARGINAL COSTS IN ITS RATE  
2 DESIGN?

3 A. Yes. OTP's revenue requirement and the class revenue responsibilities recommended by  
4 Mr. Haugen are calculated to recover the cost of service, which is measured by embedded  
5 costs. Rates must give the utility the opportunity to recover its embedded costs. By using  
6 marginal costs to design those rates, OTP's rate design maintains the benefits of marginal  
7 cost price signals while still producing overall revenues that recover the cost of service.  
8 The benefits of marginal cost price signals include designing rates with seasonal, and  
9 where possible, time of day differences, and promoting the efficient use of electricity  
10 through appropriate price signals.

11 **IV. 2018 MARGINAL COST STUDY**

12 Q. WHAT IS THE DIFFERENCE BETWEEN MARGINAL COSTS AND EMBEDDED  
13 COSTS?

14 A. The most important difference between these two types of costs are historical costs  
15 (embedded) versus future costs (marginal). Marginal cost, as defined in OTP's 2018  
16 Marginal Cost Study, is the change in total cost of service with respect to a small change  
17 in demand of a product or service. These marginal costs take into consideration changes  
18 in forecasted investments at various service levels and their impacts on utility system  
19 operations.  
20

21 Q. HOW ARE MARGINAL COSTS DEVELOPED?

22 A. OTP engaged Ms. Amparo Nieto of Economists Incorporated to develop a marginal cost  
23 study covering the period 2018-2022 applicable to service in our three jurisdictions (the  
24 2018 Marginal Cost Study). The 2018 Marginal Cost Study was developed with input  
25 from OTP staff regarding OTP's planning and operating practices, regional market price  
26 data, and system characteristics. OTP staff has also closely reviewed the 2018 Marginal  
27 Cost Study to make sure it does in fact reflect OTP's marginal costs. A copy of the 2018  
28 Marginal Cost Study is included as Exhibit \_\_\_(DGP-1), Schedule 2.



1 Q. HOW ARE THE RESULTS OF THE 2018 MARGINAL COST STUDY APPLIED TO  
2 THE RATE DESIGN PROPOSAL?

3 A. The 2018 Marginal Cost Study provides an accurate calculation of current marginal costs.  
4 But those marginal costs are significantly different than those calculated in the marginal  
5 cost study filed in our last rate case (the 2010 Marginal Cost Study). In order to avoid an  
6 abrupt reflection of the new marginal costs in our proposed rate design, OTP tempered  
7 the 2018 Marginal Cost Study results when allocating class revenue responsibilities to  
8 rate classes and in the development of individual rate components.  
9

10 Q. WHAT ARE THE MAIN DIFFERENCES IN THE RESULTS OF THE 2018  
11 MARGINAL COST STUDY AND THE RESULTS OF THE 2010 MARGINAL COST  
12 STUDY?

13 A. All marginal energy and capacity costs have decreased. For example:  
14 • Annual, summer and winter marginal energy costs are lower in the 2018 Marginal  
15 Cost Study than they were in the 2010 Marginal Cost Study. Both annual marginal  
16 energy costs and winter marginal energy costs have decreased by 51 percent and 52  
17 percent, respectively, while summer marginal energy costs have declined 49 percent.  
18 • Annual marginal capacity costs have decreased 24 percent, summer marginal capacity  
19 costs have decreased 26 percent, and winter marginal capacity costs have decreased  
20 22 percent.  
21

22 Q. WHAT IS DRIVING THESE CHANGES?

23 A. There are two general drivers. First, marginal costs should reflect the wholesale market.  
24 The wholesale market is influenced by any number of factors, including federal and state  
25 energy policies, various generation mixes, improvements in transmission capability, other  
26 infrastructure investment, and energy consumers themselves. These factors are  
27 combining in the Midcontinent Independent System Operator (MISO) market in a way  
28 that results in a general trend of low energy and capacity costs for the near-term.

29 The second driver is based on a change in assumptions behind the 2010 and 2018  
30 Marginal Cost Studies. The 2010 Marginal Cost Study reflected OTP's resource planning  
31 approach at that time. That approach required OTP to build its system to meet its system

1 peak, which occurs during the winter. The 2018 Marginal Cost Study, however, reflects  
2 OTP's current resource planning approach. The current resource planning approach is  
3 based upon OTP's obligation to meet its MISO obligations, which are measured as OTP's  
4 load coincident with MISO's peak. MISO's peak occurs during the summer. This shift  
5 from a planning approach focused on winter peak to one focused on summer peak has a  
6 significant impact on marginal capacity costs.

7  
8 Q. ARE THERE OTHER REASONS TO USE MODIFIED RESULTS FROM THE 2018  
9 MARGINAL COST STUDY WHEN DESIGNING RATES?

10 A. Yes. MISO is currently considering changes to its resource planning construct that would  
11 move away from a summer-only peak and move towards a dual (i.e. summer and winter)  
12 peak structure. As discussed above, the MISO capacity construct has a significant impact  
13 on marginal costs, so this potential change could impact marginal costs over the next  
14 several years. Reflecting this change now allows us to design rates in a way that better  
15 reflects marginal costs during the period in which the rates will be in effect.

16  
17 Q. HOW DID YOU MODIFY THE 2018 MARGINAL COST STUDY RESULTS?

18 A. We utilized the 2018 Marginal Cost Study to create a baseline of marginal costs and then  
19 made the following adjustments:

- 20 • Use a modified average of marginal energy and capacity costs of years 2018-  
21 2022, as OTP anticipates rates to be in place for at least 3 years.
- 22 • Moderate the generation capacity estimates in 2018-2022 by allocating 70 percent  
23 of their value to summer and allocate the remaining 30 percent to winter.

24  
25 Q. HOW DID YOU DECIDE ON A 70-30 ALLOCATION OF GENERATION  
26 CAPACITY VALUES?

27 A. This allocation was a judgment decision that balances the current MISO capacity  
28 construct (i.e. 100 percent of generation value in the summer, 0 percent in winter), the  
29 expected MISO capacity construct (i.e., less than 100 percent of generation value in the  
30 summer and greater than 0 percent in the winter), and the current levels of demand-  
31 capacity charges in OTP's rate schedules.

1 Q. HOW WILL YOUR 70-30 PROPOSAL IMPACT RATE DESIGN?

2 A. Rate classes without demand charges will see relatively lower increases in summer rates  
3 that would have occurred using the unmodified 2018 Marginal Cost Study results. The  
4 70-30 proposal also results in slight increases in winter rates. All else being equal, rate  
5 classes with separate energy and capacity charges will be designed with essentially the  
6 same energy charge relationships as in the unadjusted marginal cost study, but with lower  
7 increases in summer demand charges and increases in winter demand charges.

8  
9 Q. WHAT ARE THE BENEFITS IN THIS CASE OF USING MODIFIED RESULTS OF  
10 THE 2018 MARGINAL COST STUDY?

11 A. The modifications I propose approximate the expected MISO capacity construct in the  
12 near term. Further, even if the 2018 Marginal Cost Study results were not modified as I  
13 propose, the pure marginal cost price signals would have been diluted at the individual  
14 rate design level because the pure price signals would have been too extreme to  
15 implement in a single case. Finally, by using this approach, all rates will be designed  
16 based on my proposed allocation, thereby providing improved consistency across all  
17 classes and important price signals for expected generation seasonal capacity values.

18 **1. Proposed Intra-Class Revenue Allocation**

19 Q. HOW ARE CLASS REVENUE RESPONSIBILITIES ALLOCATED TO RATE  
20 CLASSES?

21 A. When the customer class has two or more rate classes, the class revenue responsibilities  
22 (embedded costs) developed by Mr. Haugen generally are allocated to the individual rate  
23 classes based on the EPMC methodology (marginal costs).<sup>1</sup> Exhibit\_\_\_(DGP-1),  
24 Schedule 3 shows the proposed intra-class revenue allocations.

25  

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<sup>1</sup> A customer class is a group of customers with similar usage patterns and electrical facilities. Customers within the customer class may have more than one rate option – or rate class. For example, the current Residential customer class has two rates; a general service rate and a demand-controlled rate, each with their own applicability requirements.

1 Q. WHAT IS THE EPMC METHODOLOGY?

2 A. The EPMC methodology allocates the class revenue responsibilities to rate classes based  
3 on each rate class's marginal cost revenues. Marginal cost revenues for a rate class are  
4 determined by multiplying the marginal cost (modified as discussed above) times the rate  
5 class billing determinants. Exhibit\_\_\_(DGP-1), Schedule 4 describes total marginal cost  
6 revenues by customer and rate class.<sup>2</sup>

7  
8 Q. CAN YOU PROVIDE AN EXAMPLE OF THE EPMC METHODOLOGY?

9 A. Yes. The table below provides a simplified example of the "pure" version of the EPMC  
10 methodology, meaning it allocates class revenues to rate classes based entirely on the  
11 marginal cost revenues calculated using the results of the marginal cost study. The  
12 example is based on a customer class with two rate classes, where one rate class provides  
13 80 percent of the overall marginal cost revenues for that customer class and the other rate  
14 class provides 20 percent of the overall marginal cost revenues for that customer class.

15  
16 **Table 1**  
17 Simplified EPMC Methodology Example

	Marginal Cost Revenue Percentage		Revenue Responsibility	
Rate Class A	80%	(a)		
Rate Class B	20%	(b)		
Class Revenue Responsibility			\$100,000	(c)
Rate Class A			\$80,000	[(a)*(c)]
Rate Class B			\$20,000	[(b)*(c)]

18  
19 Q. WHAT ARE THE BENEFITS OF THE EPMC METHODOLOGY?

20 A. The EPMC methodology is aligned with two of our rate structure objectives – efficiency  
21 and gradualism. Using marginal cost-based revenues to allocate revenue from customer  
22 classes to rate classes sets efficient revenue targets for rates within a class.

<sup>2</sup> Present base revenues in Schedule 3 are slightly (net \$743) different from the present base revenues shown in Mr. Haugen's Direct Testimony. The difference is attributable to Schedule 3 reflecting air conditioning rider and water heating rider credits and TailWinds and sirens revenues.

1 Q. HAS THE EPMC METHODOLOGY BEEN USED AND ACCEPTED IN OTP'S  
2 JURISDICTIONS?

3 A. Yes. The Commission approved OTP's use of the EPMC methodology in OTP's last  
4 general rate case (Case No. EL10-011). The Minnesota Public Utilities Commission and  
5 the South Dakota Public Utilities Commission approved the use of the EPMC  
6 methodology in OTP's last general rate cases in each of those jurisdictions (MN PUC  
7 Docket No. E017/GR-15-1033 and ND PSC Docket No. PU-08-862).

8  
9 Q. IS OTP PROPOSING TO USE A MODIFIED VERSION OF THE EPMC  
10 METHODOLOGY?

11 A. Yes. I recommend using a modified version of the EPMC methodology to allocate class  
12 revenues to rate classes.

13  
14 Q. WHY IS OTP PROPOSING TO USE A MODIFIED VERSION OF THE EPMC  
15 METHODOLOGY IN ALLOCATING CLASS REVENUES TO RATE CLASSES?

16 A. The pure EPMC method would have resulted in disproportionate changes in rate class  
17 revenue responsibilities, which is inconsistent with our rate structure objectives of  
18 gradualism and rate continuity. Using the modified version of the EPMC methodology  
19 allowed us to balance the efficiency benefits of marginal cost-based rates with other  
20 important rate structure objectives.

21  
22 Q. PLEASE DESCRIBE HOW OTP APPLIED THE EPMC METHODOLOGY.

23 A. OTP utilized two EPMC approaches to allocate class revenues for those classes that have  
24 more than one rate class (except for Other Public Authority class, discussed below). The  
25 two approaches have different levels of gradualism from the pure or strict application of  
26 EPMC, thereby mitigating the abruptness of rate changes.

- 27 1. Method 1 – This method modifies the results from strict application of EPMC  
28 within a class and was applied to four of the seven customer classes. Under this  
29 method, the target revenue for a rate class is 50 percent of the difference between:  
30 (1) the overall percentage revenue increase proposed by Mr. Haugen for the  
31 customer class; and (2) the percentage revenue increase that would result from

applying EPMC to each rate class within the customer class. This approach also recognizes the objective of gradualism.

2. Method 2 – This method utilizes a blended variation between Method 1 and a strict application of EPMC within a customer class. This method was applied to three customer classes. The purpose of this method is to bring the rate classes within the customer class into better alignment with cost responsibility. Under this method, we continue to gradually reduce the distance between revenue increase allocation within the Rate Class.

Q. WHICH EPMC METHODOLOGY DID YOU USE FOR EACH CUSTOMER CLASS?

A. The table below identifies which EPMC method for each customer class.

**Table 2**  
Summary of EPMC Methods for Customer Classes with Multiple Rate Classes

<b>Customer Class</b>	<b>EPMC Method</b>
Residential	Method 1
Farm	CCOSS
General Service	Method 1
Large General Service	Method 2
Irrigation	Method 1
Outdoor Lighting	Method 2
Water Heating Control	CCOSS
Other Public Authority	CCOSS
Controlled Service - Interruptible	Method 2
Controlled Service - Deferred	Method 1

For further details on individual rate EPMC results, see Exhibit\_\_\_\_(DGP-1), Schedule 4.

Q. HOW DID YOU ALLOCATE THE OTHER PUBLIC AUTHORITY CUSTOMER CLASS REVENUES TO RATE CLASSES?

A. Other public authority class revenues were allocated to each rate class uniformly at the same percentage increase as recommended by Mr. Haugen for the customer class overall.

1 An EPMC approach was not required because a majority of the revenues from this class  
2 are from one rate class.

3 **B. Development of Individual Rate Components**

4 Q. WHAT IS THE NEXT STEP IN THE RATE DESIGN PROCESS AFTER  
5 ALLOCATING CUSTOMER CLASS REVENUES TO RATE CLASSES?

6 A. After class revenues are allocated to rate classes, the individual rate components for each  
7 class are developed.  
8

9 Q. WHAT ARE THE COMPONENTS OF CUSTOMER RATES?

10 A. There are three general rate components: energy charges, demand or capacity charges,  
11 and fixed charges. The rate design for different rate classes may or may not include each  
12 component. For example, the standard Residential rate currently does not include a  
13 separate demand or capacity charge because omitting such charges makes the rate  
14 structure simpler and avoids the need to install more costly metering that has the  
15 capability to measure demand. In contrast, the Residential Demand Control rate is a more  
16 complicated rate and does employ a costlier meter to measure demand. And for further  
17 contrast, the proposed Residential Time of Day rate utilizes three charge periods per  
18 season versus the other rates with only a single charge period per season.

19 **1. Fixed Charges Defined**

20 Q. WHAT ARE FIXED CHARGES?

21 A. Fixed charges are monthly per-customer charges that do not vary with usage. They  
22 typically take the form of customer charges and local facilities charges. OTP's rate  
23 schedules include both customer charges and facilities charges, though for most classes,  
24 the facilities charge is set at \$0.00.  
25

26 Q. WHAT COSTS ARE TYPICALLY RECOVERED THROUGH FIXED CHARGES?

27 A. Fixed charges are typically used to recover costs of service that do not vary with  
28 electricity consumption after the customer connects to the grid. These costs include  
29 marginal customer-related expenses, such as installing, operating and maintaining the

meter and service drop, conducting meter reading and billing activities, and providing other informational services.

Fixed charges can also recover the cost of connecting to the local distribution system, including the required transformers, secondary lines or local primary lines that may need to be added or expanded to accommodate the customer's expected maximum demand over the life of the facilities. The type of distribution connection policy in place will determine the local facilities costs that are to be recovered in rates as opposed to up-front. If customers within the class are relatively homogeneous, the local facilities costs may be recovered in a per-customer monthly fixed charge, calculated on the basis of the class average kW of design demand, as opposed to the individual customer's design demand.<sup>3</sup> Distribution facilities costs are recovered as a monthly fixed charge in the 2018 Marginal Cost Study.

Q. PLEASE PROVIDE ADDITIONAL DISCUSSION OF WHAT COSTS ARE CLASSIFIED AS CUSTOMER-RELATED IN THE 2018 MARGINAL COST STUDY.

A. Marginal customer-related costs are costs that vary with the number of customers on the system. Marginal customer costs vary by customer type within the class but do not vary with on-going changes in usage. The following costs are classified as customer-related in the 2018 Marginal Cost Study: annualized investment and operation and maintenance (O&M) expenses on meters and service drops; customer account expenses (such as meter-reading, billing, and collection); and customer service and informational expenses such as call centers. Certain supervisory costs and administrative and general expenses associated with growth in customer-related costs are also classified as customer-related.

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<sup>3</sup> A "design demand" or "contract demand" is equivalent to a capacity that is reserved in the transformer for all customers connected to it. It is thus appropriate for a per-contract kW charge, or else as part of the fixed customer charge assuming that there is enough heterogeneity in the peak demands within the class. A daily demand charge measures actual metered demand and recognizes that demand reductions can free up space for other customers at the high voltage distribution system, and therefore it is appropriate for recovery in volumetric charges. If there are different customer densities in the service territory, such as rural and urban areas, rural local facilities costs may be higher than urban and, in that case, it may be best to have a monthly facilities cost per kW that differs by area type to avoid subsidization of rural areas by urban customers, unless the line extension policy already corrects for that. A facility charge may not be feasible by OTP at this time, however, since it would require metering capability that is able to register non-coincident peak demand.



Ultimately, because these costs do not vary with usage, they are appropriately recovered in a fixed monthly component of the rate.

## 2. Proposed Fixed Charges

Q. WHAT CUSTOMER CHARGES IS OTP PROPOSING IN THIS CASE?

A. The table below shows the proposed customer charge component of the fixed charges.

**Table 3**  
Proposed Customer Charges  
(\$/Month)

<u>Class</u>	<u>Present</u>	<u>Proposed</u>
Residential	\$8.00	\$15.23
Residential – Demand Control	\$13.00	\$20.10
Farm Service – Single Phase	\$9.00	\$17.31
Small General Service	\$13.00	\$20.00
General Service (Secondary)	\$12.00	\$25.00
General Service - Time of Use	\$19.00	\$200.00
Large General Service (Secondary)	\$50.00	\$215.90
Large General Service – Time of Day (Primary)	\$70.00	\$282.00
Irrigation – Option 1	\$2.00	\$12.00
Irrigation – Option 2	\$6.00	\$18.00
Outdoor Lighting – Metered	\$2.50	\$2.50
Municipal Pumping (All)	\$3.00	\$12.00
Civil Defense	\$1.00	\$2.50
Water Heating	\$2.50	\$4.00
Controlled Service – Interruptible- Large #1	\$5.00	\$15.00
Controlled Service – Interruptible- Large #2	\$6.00	\$15.00
Controlled Service – Interruptible - Small	\$2.00	\$10.00
Deferred Load Service	\$3.00	\$8.50
Fixed Time of Service (Secondary)	\$1.50	\$6.70

Q. DID OTP CONSIDER MARGINAL COST IN SETTING THE PROPOSED CUSTOMER CHARGES?

A. Yes. Exhibit\_\_\_(DGP-1), Schedule 5 compares present customer charges to marginal customer-related costs from the 2018 Marginal Cost Study. OTP recommends bringing customer charges for all classes into better alignment with marginal costs.

**Table 4**  
Proposed Customer Charge as Percentage of Marginal Cost – Secondary Service  
(\$/Month)

<u>Class</u>	<u>2018 Marginal Cost (\$/Month)</u>	<u>Proposed Customer Charge (\$/Month)</u>	<u>Proposed Customer Charge as Percent of 2018 Marginal Cost</u>	<u>Present Customer Charge as Percent of 2010 Marginal Cost</u>
Residential	\$15.44	\$15.23	98.6%	66%
Residential – Demand Control	\$20.42	\$20.10	98.4%	82%
Farm Service – Single Phase	\$17.67	\$17.31	98.0%	64%
Small General Service	\$24.94	\$20.00	80.2%	77%
General Service (Secondary)	\$32.57	\$25.00	76.8%	62%
General Service TOU	\$229.16	\$200.00	87.3%	8%
Large General Service (Secondary)	\$225.79	\$215.90	95.6%	17%
Large General Service – Time of Day (Primary)	\$292.96	\$282.00	96.3%	24%
Irrigation – Option 1	\$24.65	\$12.00	48.7%	3%
Irrigation – Option 2	\$24.65	\$18.00	73.0%	9%
Outdoor Lighting – Metered	\$0.30	\$2.50	833%	59%
Municipal Pumping (All)	\$27.19	\$12.00	44.1%	12%
Civil Defense	\$0.30	\$2.50	833%	769%
Water Heating	\$5.63	\$4.00	71.0%	63%
Controlled Service - Interruptible- Large #1	\$20.46	\$15.00	73.3%	25%
Controlled Service - Interruptible- Large #2	\$20.46	\$15.00	73.3%	30%
Controlled Service – Interruptible- Small	\$20.46	\$10.00	48.9%	34%
Deferred Load Service	\$8.91	\$8.50	95.4%	46%
Fixed Time of Service	\$6.76	\$6.70	99.1%	31%

- Q. IS IT IMPORTANT FOR FIXED CHARGES TO BE ALIGNED WITH MARGINAL COSTS?
- A. Yes. As discussed in more detail below, aligning fixed charges with marginal costs promotes fairness among customers and encourages the efficient use of resources.

1 a) **Intra-Class Equity**

2 Q. WHY DOES ALIGNING FIXED CHARGES WITH MARGINAL COSTS PROMOTE  
3 FAIRNESS AMONG CUSTOMERS?

4 A. When fixed charges are set below marginal cost, the balance of the costs that should be  
5 recovered through fixed charges are instead recovered through volumetric charges. This  
6 means that customers with usage that exceeds the class average pay more than their fair  
7 share of the fixed cost of service. By aligning fixed charges with marginal costs, OTP's  
8 proposed rate design makes important steps to improve customer equity.

9  
10 Q. SHOULD FIXED CHARGES BE KEPT UNREASONABLY BELOW MARGINAL  
11 COSTS AS A MEANS OF ADDRESSING AFFORDABILITY FOR RESIDENTIAL  
12 CUSTOMERS?

13 A. No. Low usage is not always correlated with low income and some low-income  
14 customers are in fact, high electricity users. Keeping fixed charges unreasonably below  
15 marginal cost helps Residential customers with usage below the class average usage, but  
16 there is nothing in this approach that means the benefits go to those that need them.  
17 Ultimately, keeping fixed charges unreasonably below marginal cost is a very inefficient  
18 means of helping low income customers, as the benefits flow to both low income and  
19 higher income customers. Direct assistance such as the Low-Income Home Energy  
20 Assistance Program (LIHEAP) is a more reasonable approach for addressing  
21 affordability.

22  
23 Q. DO YOU HAVE ANY DATA SHOWING THAT AN ARTIFICIALLY LOW FIXED  
24 CHARGE IS NOT AN APPROPRIATE MEANS OF ADDRESSING  
25 AFFORDABILITY FOR OTP'S LOW-INCOME RESIDENTIAL CUSTOMERS?

26 A. Yes. The table below shows the average usage of OTP's low-income Residential  
27 customers<sup>4</sup> is greater than the average usage of the OTP Residential population overall  
28 and is greater than the average usage of the OTP non-low income Residential customer  
29 population. Further, OTP's low-income customers are more likely than the OTP  
30 Residential population at large to fall into the group that pays more than their fair share of

---

<sup>4</sup> For purposes of this Direct Testimony, low-income is defined as those customers receiving LIHEAP assistance.

1 the cost of service when fixed charges are kept artificially low. All of this means that  
2 more low-income Residential customers are harmed by keeping fixed charges below  
3 marginal cost than are helped.

4  
5 **Table 5**  
6 Comparison of Residential Service (Section 9.01) Usage  
7 (2017 Usage Data)

	Residential Customers	Low-Income Customers	Non-Low Income Customers
Average Monthly Usage (kWh / Month)	870	1,274	852
Percentage of Customers with Usage in Excess of 870 kWh / Month	37%	55%	36%

8  
9 Additional details regarding the usage characteristics of the Residential class  
10 (Section 9.01) are available in Exhibit\_\_\_(DGP-1), Schedule 6. At least for OTP's  
11 customers, there does not appear to be a strong relationship between income and usage.

12  
13 Q. ARE THERE OTHER ELEMENTS OF OTP'S CUSTOMER POPULATION THAT  
14 MAKE INTRA-CLASS EQUITY ESPECIALLY IMPORTANT?

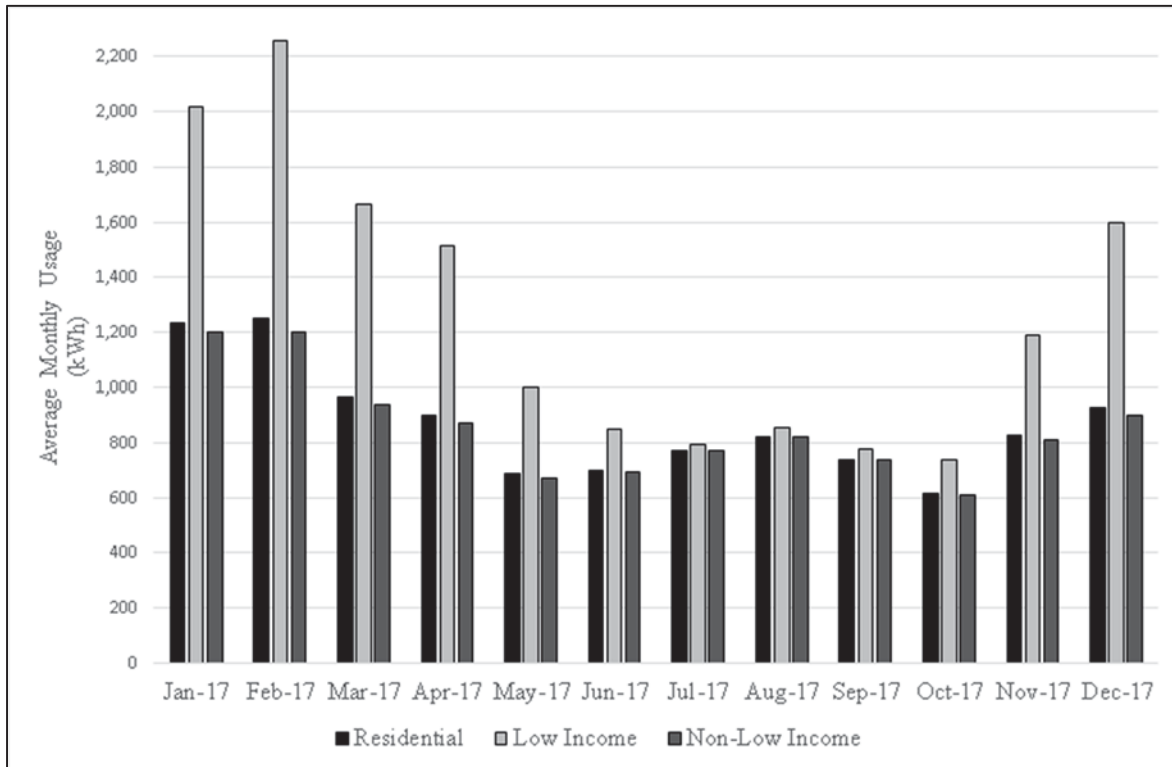
15 A. Yes. Our service area is predominantly rural and many customers rely on electricity for  
16 heating. Customers with electric heating are more likely to have usage that exceeds the  
17 class average, meaning they end up paying more than their fair share of the cost of  
18 service when fixed charges are kept below marginal cost. The mere fact that these  
19 customers live where they do and have limited heating options means they are uniquely  
20 harmed by keeping fixed charges at unreasonably low levels.

21  
22 Q. IS THERE ANY DATA THAT INDICATES LOW-INCOME CUSTOMERS ARE  
23 PARTICULARLY RELIANT ON ELECTRICITY FOR HEATING PURPOSES?

24 A. Yes. The figure below compares average monthly usage for OTP's overall Residential  
25 customer population and the low-income and non-low-income subgroups. Low-income  
26 customers' winter usage is significantly higher than the usage of the Residential  
27 population overall and of non-low-income customers during winter months. The  
28 differential in usage being so much more pronounced in the winter months indicates that

1 the low-income population relies more on electricity for heating purposes than does the  
2 non-low income and Residential populations overall.

3 **Figure 1**  
4 Comparison of Monthly Residential Service (Section 9.01) Customer Usage  
5 (2017 Usage Data)



6  
7  
8 Q. ARE THERE COST-BASED REASONS SUPPORTING OTP'S FIXED CHARGE  
9 PROPOSAL?

10 A. Yes. As discussed above, fixed charges are intended to recover costs that do not change  
11 when a customer uses more (or less) electricity or demand after connecting to the grid.  
12 Some of these costs have little relationship to the number of customers served. For  
13 example, every utility, no matter the size, needs a billing system. A larger utility can  
14 spread the costs of that billing system across more customers, which, all else being equal,  
15 would lead to lower fixed charges. OTP is a small utility and therefore has fewer  
16 customers over which to spread customer-related costs.

17 Also, some of the costs recovered through fixed charges depend on customer  
18 density. Meter reading would be an example: a more densely packed system will have

1 lower meter reading costs, again, all else being equal. OTP's South Dakota service  
2 territory is relatively rural, which, all else being equal, increases customer-related costs.

3  
4 Q. ARE THERE OTHER REASONS FOR OTP TO HAVE HIGHER FIXED CHARGES?

5 A. Yes. OTP must deploy more transformers per customer than more urban utilities. Also,  
6 we deploy larger transformers (and the minimum load our system is designed to handle is  
7 larger) given our customers' use of electricity for heating purposes. All else being equal,  
8 more and larger transformers would lead to higher fixed costs that are recovered through  
9 fixed charges.

10  
11 Q. ARE THERE ANY OTHER FACTORS THAT RELATE TO THE FAIRNESS OF  
12 OTP'S PROPOSED FIXED CHARGES?

13 A. Yes. OTP's *rate design proposal* does not change the total amount to be collected from  
14 customers – only the balance between amounts collected through the fixed charges and  
15 the amounts collected through the energy charge. Increases in fixed charges are offset by  
16 reductions in energy charges. Customers with usage that is equal to the class average will  
17 see no change in the total bill as a result of the fixed charge proposal.

18 **b) Conservation and Self-Generation**

19 Q. DO OTP'S PROPOSED FIXED CHARGES COMPROMISE EFFICIENT  
20 CONSERVATION INCENTIVES?

21 A. No. OTP's proposed fixed charges do not harm efficient conservation initiatives. By  
22 using marginal costs to design rates, OTP's overall rate structure includes price signals  
23 that allow customers to compare the incremental cost of service (though averaged over  
24 the season) with the incremental value of using more energy. Such price signals  
25 encourage the efficient use of resources and provide a sound basis for customers to assess  
26 the value of conservation.

27  
28 Q. WHAT IS THE IMPORTANCE OF THE WORD "EFFICIENT" IN THE PHRASE  
29 "EFFICIENT CONSERVATION INCENTIVES"?

30 A. Public policy does not support conservation at any cost. We want to encourage  
31 economically efficient conservation efforts. Setting rates that reflect the marginal cost of

1 service helps send appropriate price signals that ultimately incentivize economically  
2 efficient conservation.

3  
4 Q. PLEASE EXPLAIN HOW ARTIFICIALLY LOW FIXED CHARGES DO NOT  
5 ENCOURAGE ECONOMICALLY EFFICIENT CONSERVATION.

6 A. When fixed charges are set too low, costs that are unrelated to usage are more likely to be  
7 shifted to volumetric charges. Artificially high volumetric prices, all else being equal,  
8 incentivize customers to reduce usage below optimal levels or self-generate. Such  
9 reductions result in an inefficient use of the capacity that is available. If customers self-  
10 generate due to excessive volumetric charges, that decision represents uneconomic  
11 bypass of the system because the total cost of service for all customers (those with self-  
12 generation and those without self-generation) will increase.

13  
14 Q. ARE THERE BETTER WAYS TO PROMOTE CONSERVATION?

15 A. Yes. OTP's Water Heating Control Rider is a very effective way to achieve energy  
16 conservation goals and promote more optimal patterns of usage. A well designed direct  
17 load control program keeps marginal cost principles in mind so that customers' benefits  
18 (in the form of bill reductions) are aligned with avoided cost to the utility over time.  
19 Marginal cost-based rates that signal the higher cost of service in the hours in the day  
20 when electricity costs are the highest or when capacity is strained so that load reductions  
21 provide the highest value to the utility and the system overall.

22 Dynamic rates (such as Critical Peak Pricing, or Peak Time Rebate) can provide  
23 the strongest conservation signals. Less dynamic but still useful for conservation  
24 purposes are marginal-cost based time of use (TOU) rates, which may include either a  
25 super peak kWh charge or an on-peak demand charge to reflect peak marginal energy and  
26 capacity costs, including marginal generation capacity, transmission and high-voltage  
27 distribution costs.

## V. INDIVIDUAL RATE PROPOSALS

### A. Residential Class

Q. WHAT RATE SCHEDULES ARE INCLUDED IN THE RESIDENTIAL CLASS?

A. There are two rate schedules in the Residential Class: Residential Service (Section 9.01) and Residential – Controlled Demand (Section 9.02).

Q. PLEASE DESCRIBE YOUR RATE DESIGN PROPOSAL FOR THE 9.01 RESIDENTIAL SERVICE RATE.

A. We are proposing to eliminate the winter declining block and make rate level adjustments. This rate includes a monthly customer charge, a minimum bill equal to that customer charge, and a flat seasonally differentiated energy charge. The energy charges are set at levels necessary to meet the revenue requirement not satisfied by the customer charge. The proposed energy charges, although purposely above marginal cost, provide an efficient price signal for Residential customers. The proposed customer charge is nearly 100 percent of marginal cost, as discussed above. Marginal costs for facilities were developed based on customer usage, a proxy for design demand, tied to transformer and other customer-related distribution equipment.

**Table 6**  
Comparison of Current and Proposed 9.01 Residential Rate and Marginal Costs

		Forecasted Revenue	Proposed Revenue	Base Rate % Change			
Residential Service	Section 9.01	\$5,752,686	\$7,370,258	28.12%			
		Customer Charge per month	Monthly Minimum Bill per month	Facilities Charge per month	Energy Charge		
					All Year	per kWh Summer	Winter
Current Rate		\$8.00	Customer + Facilities		First 500	\$0.05599	\$0.05819
					Excess	\$0.04987	\$0.05260
Seasonal Customer Charge		\$32.00			AC Credit	-\$7.00	
					Water Heating Credit	-\$4.00	
Proposed Rate		\$15.23	Customer + Facilities	\$0.00	ENERGY	\$0.07786	\$0.05886
Seasonal Customer Charge		\$60.92		\$0.00			
					AC Credit	-\$8.25	
					Water Heating Credit	-\$8.00	
Marginal Costs		\$15.44	< 1,800 kWhs ≥ 1,800 kWhs	\$12.10 \$48.07	All kWh	\$0.04810	\$0.03960

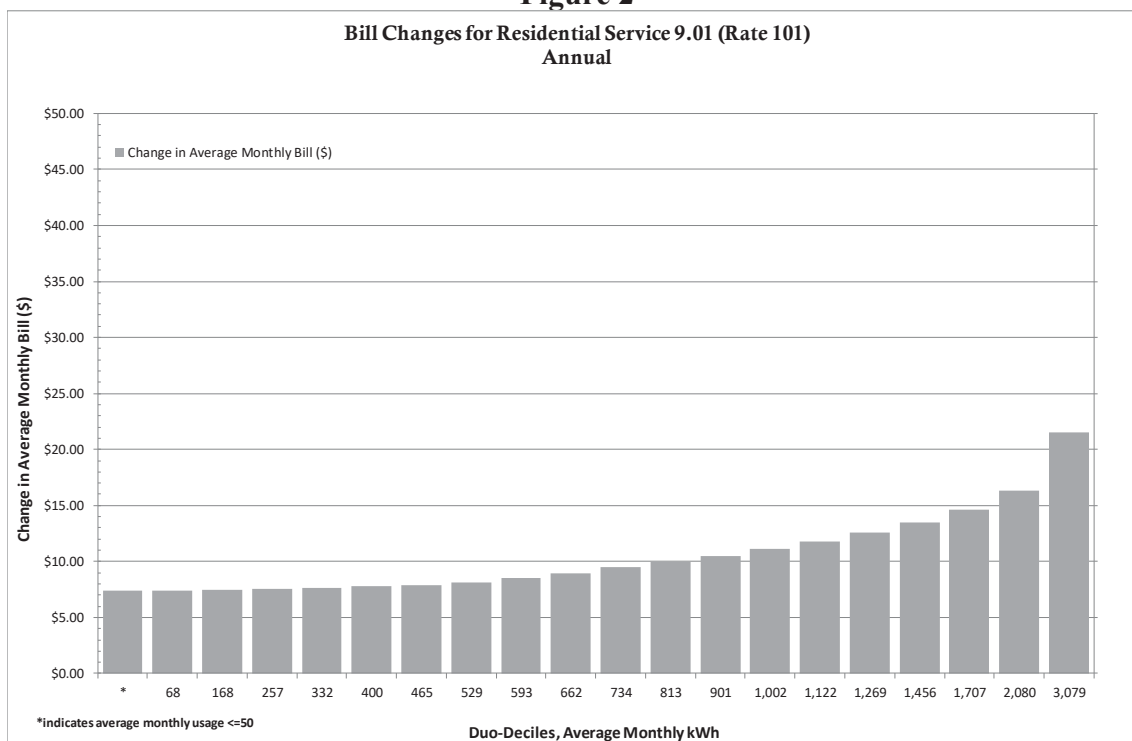


Q. WHAT ARE THE BILL IMPACTS OF YOUR PROPOSED 9.01 RESIDENTIAL RATE?

A. To analyze bill impacts from each of OTP's proposed rates, we computed an average customer's billing determinants for each customer duo-decile (20 equal segments) and calculated that customer's bill under current rates and under proposed rates for each rate schedule within each class, using 2017 adjusted billing information (OTP's Test Year). We then created bar charts showing the average monthly bill changes (dollar amounts and percentage) for the duo-deciles of customers, ordered by average monthly kWh use. Each bar represents 5 percent of customer accounts in the class. It is important to keep in mind that the smallest one or two bars probably include significant numbers of customers who were not on the system for the entire year, are seasonal customers, or are anomalies such as customers who shifted from one rate to another (or shifted load to a rider) during the year.

As the bar chart for Residential customers shows, most of the Residential 9.01 customers will see annual average monthly impacts of less than \$10.

**Figure 2**



Q. PLEASE DESCRIBE YOUR RATE DESIGN PROPOSAL FOR THE 9.02 RESIDENTIAL-CONTROLLED DEMAND RATE.

A. OTP's proposed Residential Controlled Demand (RCD) rate retains the current rate design. As shown in the table below, the proposal continues with seasonal energy charges above marginal cost to achieve the embedded revenue requirement for this class. The demand charges for summer and winter are set at equal rates. The flat demand charge proposal deviates from marginal costs because the rate design is in transition. This rate is designed for reducing demand in the winter when OTP's system peaks. As discussed above, however, OTP's capacity obligation under MISO's Module E construct is based upon summer peak. Therefore, setting seasonal demand charges equally signals to the customer the value of demand in both seasons and the importance of responding to demand signals. The current demand charges are levied with a 12-month ratchet, using only the winter season. The facilities charges are not included as a separate charge in the rate design. Customer Charge is at 98.4 percent of the marginal cost.

**Table 7**  
Comparison of Current and Proposed 9.02 Residential Controlled Demand and Marginal Costs

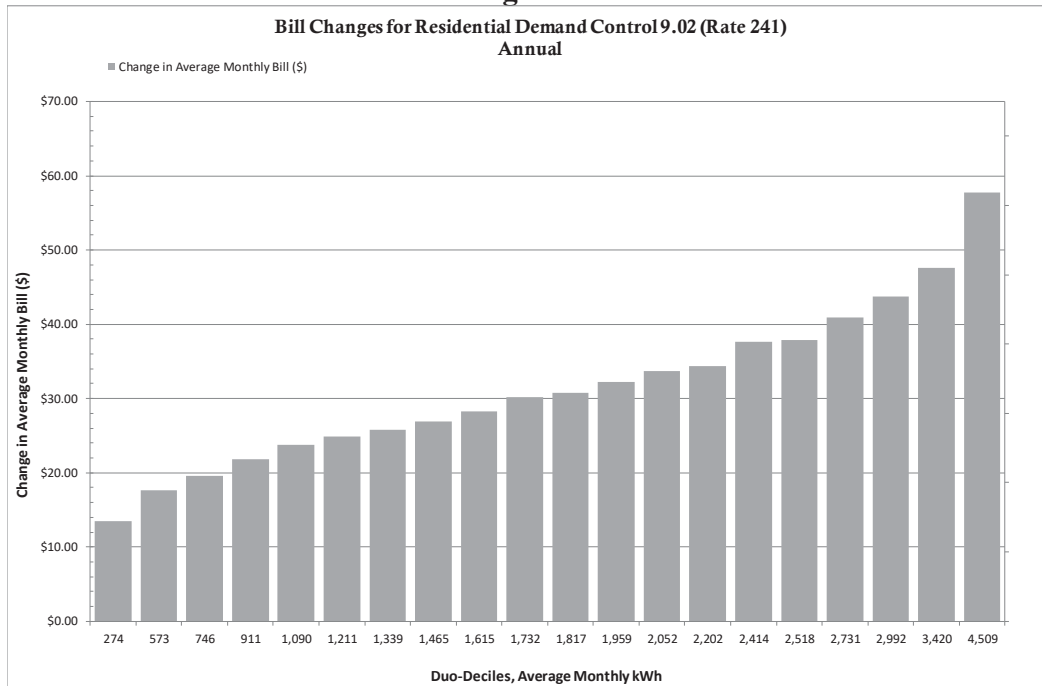
RESIDENTIAL DEMAND CONTROL SERVICE		Section 9.02		Forecasted Revenue	Proposed Revenue	Base Rate % Change			
				\$411,844	\$620,276	50.61%			
		Customer Charge per month	Minimum Bill per month	Facilities Charge per month		Charge per kWh Summer Winter		Demand Charge per kW per mo. Summer Winter per 12-mo. max monthly	
Current Rate									
Customer Charge per Month:		\$13.00	Cust. + Facility + Demand Charges	Facilities Charge per Month All Customers:	\$0.00	All kWh:	\$0.02022	\$0.02399	\$7.05 \$5.93
Proposed Rate									
Customer Charge per Month:		\$20.10	Cust. + Facility + Demand Charges	Facilities Charge per Month	\$0.00	All kWh:	\$0.04707	\$0.03607	\$8.00 \$8.00
Marginal Costs									
		\$20.42		Annual max. monthly kWh Urban Rural	\$12.10 \$48.07	Energy Only: Summer Winter		Capacity Only Summer Winter \$15.35 \$9.27	

Q. WHAT ARE THE BILL IMPACTS FROM YOUR PROPOSED 9.02 RESIDENTIAL CONTROLLED DEMAND RATE?

A. The bill impacts, shown in the figure below, are equitably distributed across groups of customers with increasing average monthly energy consumption. For comparison purposes, the 2017 Test-Year average customer usage on Residential Controlled Demand is greater than the Residential Service Customer by a factor of about 2.2.

1

**Figure 3**



2  
3

**B. Farm Class**

Q. ARE YOU PROPOSING ANY RATE STRUCTURE CHANGES FOR THE FARM CLASS?

A. Yes. Similar to the Residential General Service, I am proposing to eliminate the winter declining block and make rate level adjustments. The customer charges are set near 100 percent of marginal cost. All other charges are adjusted to meet the class revenue requirement.

10

**Table 8**  
Comparison of Current and Proposed 9.03 Farm Service and Marginal Costs

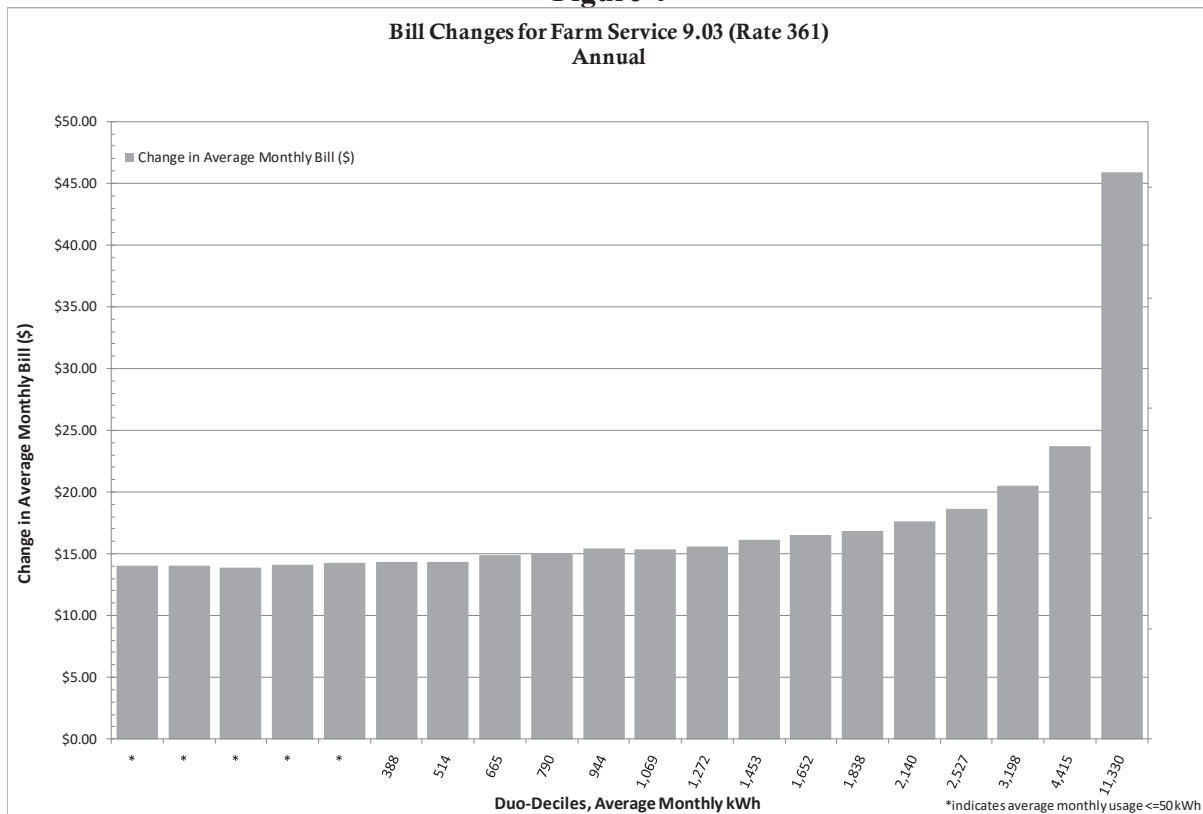
		Forecasted Revenue		Proposed Revenue	Base Rate % Change	
<b>FARM SERVICE</b>	<b>Section 9.03</b>	\$430,815		\$558,024	29.53%	
	Customer Charge per month	Monthly Minimum Bill per month	Facilities Charge per kVA of Transformer		Energy per kWh Summer Winter	
<b>Current Rates</b>	\$9.00	Cust + Fac	Single-Phase Charge per Mo.	\$0.00	First 1600 kWh	0.04918
			3-Phase Charge per Mo.	\$5.00	Excess	0.05119
						0.04856
<b>Proposed</b>	\$17.31	Cust + Fac	Facilities Charge per kVA of Transformer			
			Single-Phase , per Month	\$6.00	All kWh	\$0.06657
			3-Phase, per Month	\$10.00		\$0.05481
<b>Marginal Costs</b>	\$17.67	Cust + Fac	Single-Phase Monthly Charge	\$ 48.64		
			3-Phase Monthly Charge	\$ -		
			Overhead <= 25kVa	\$ 35.28		
			Overhead > 25kVa	\$ 64.11		
			Underground <= 25kVa	\$ 58.39		
			Underground > 25kVa	\$ 103.80		
					All kWh	\$0.04810
						\$0.03960

Q. WHAT ARE THE BILL IMPACTS FROM YOUR PROPOSED FARM RATE?

A. As shown in the figure below, approximately 85 percent of customers (the first 17 duo-deciles) see annual average monthly bill increases of less than \$20 per month. The last three duo-deciles show higher charges associated with increased use.

1

**Figure 4**



2  
3

**C. General Service Class**

Q. WHAT RATE SCHEDULES ARE YOU PROPOSING TO INCLUDE IN THE GENERAL SERVICE CLASS?

A. There are three rates within the General Service Class: Small General Service (Under 20 kW) (Section 10.01); General Service (20 kW or Greater) (Section 10.02); and General Service – Time of Use (Section 10.03).

Q. PLEASE DESCRIBE YOUR RATE DESIGN PROPOSAL FOR THE 10.01 SMALL GENERAL SERVICE (UNDER 20 KW) RATE.

A. As shown in the table below, OTP continues to propose the elimination of declining block rates. Proposed energy charges for the Small General Service (Under 20 kW) above marginal cost. I also propose a customer charge increase to 80 percent of marginal cost. The minimum bill continues to equal the customer charge.

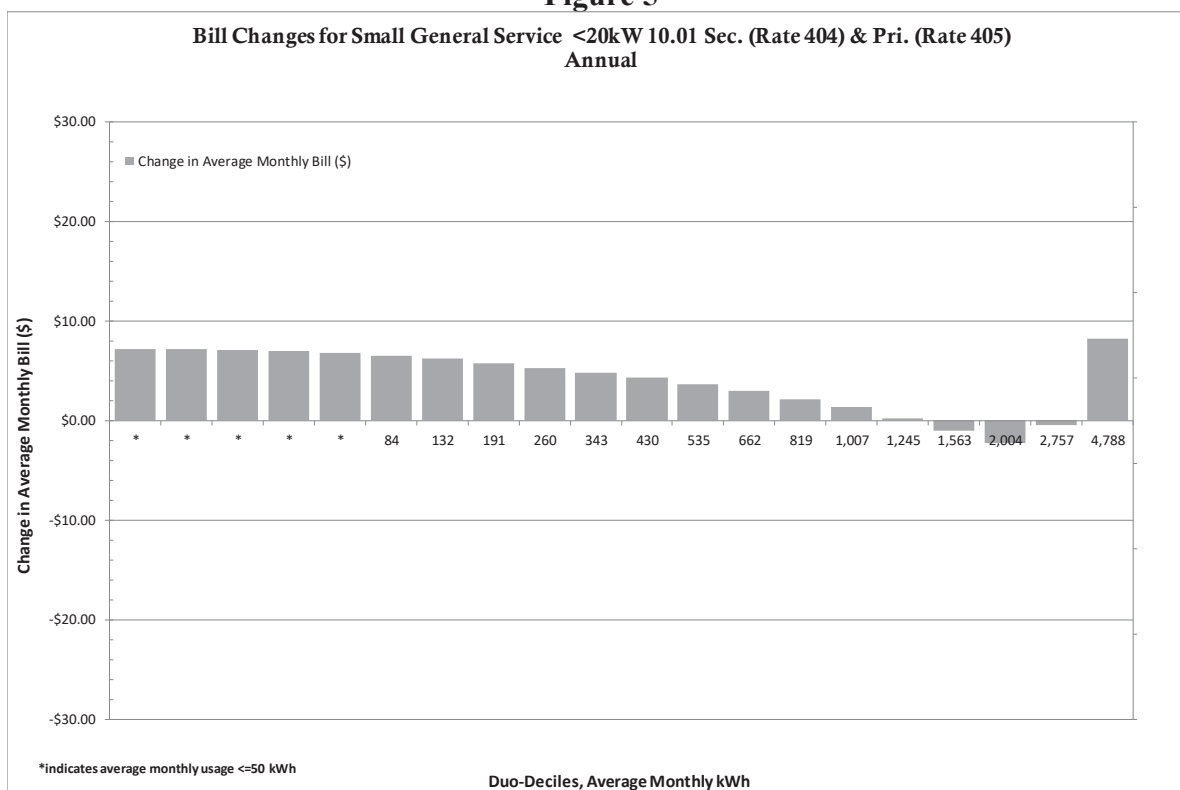
**Table 9**  
**Comparison of Current and Proposed 10.01 Small General Service (Under 20 kW)**  
**Rate and Marginal Costs**

SMALL GENERAL SERVICE		Section 10.01		Forecasted Revenue		Proposed Revenue	Base Rate % Change
Under 20 KW				\$1,256,209		\$1,456,887	15.97%
	Customer Charge per month	Monthly Minimum Bill per month	Facilities Charge per annual max. kW per month	Energy Charge per kWh			
				Summer	Winter		
Current Rate GS							
Secondary Service	\$13.00	Customer Charge	NA	\$0.05235	\$0.05445	First 2000 kWh	
				\$0.04476	\$0.04685	Excess	
Primary Service	\$13.00	Customer Charge	NA	\$0.04980	\$0.05137	First 2000 kWh	
				\$0.04224	\$0.04381	Excess	
Proposed GS Rate							
Secondary Service	\$20.00	Customer Charge	NA	\$0.07023	\$0.04751		
Primary Service	\$20.00	Customer Charge	NA	\$0.06768	\$0.04552		
Marginal Costs							
Secondary Service	\$24.94		\$45.63	\$0.06065	\$0.04103		
Primary Service	\$24.94		\$30.58	\$0.05845	\$0.03931		

- Q. WHAT ARE THE BILL IMPACTS FROM YOUR PROPOSED 10.01 SMALL GENERAL SERVICE (UNDER 20 KW) RATE?
- A. Approximately 80 percent of the class (represented by the first 16 duo-deciles) will see an increase of less than \$10.00/month. Except for the last duo-decile, the remaining customers will realize savings.

1

**Figure 5**



2  
3

Q. PLEASE DESCRIBE YOUR RATE DESIGN PROPOSAL FOR 10.02 GENERAL SERVICE (20 KW OR GREATER).

A. In this case, we have introduced a differentiation between the customer charges for primary and secondary service to reflect the difference in marginal cost of service between the two. As shown in the table below, the proposed customer charges and facilities charges are set closer to marginal cost. The proposed energy charge is set above marginal energy costs to meet the revenue requirement not satisfied by other charges. The minimum bill is the sum of the customer and facilities charges.

Q. ARE YOU PROPOSING ANY OTHER CHANGES TO THE 10.02 GENERAL SERVICE (20 KW OR GREATER) RATE?

A. Yes. OTP is introducing a new charge for low load factor customers to improve equity within the class by moving these customers closer to the higher cost they impose on the system. This additional charge is only for customers who meet the load factor and demand (kW level) criteria. Without this proposed low load factor charge, the remaining

customers with higher load factors (and therefore more efficient usage) would see additional rate increases.

**Table 10**  
Comparison of Current and Proposed 10.02 General Service (20 kW or Greater)  
Rate and Marginal Costs

GENERAL SERVICE		Section 10.02		Forecasted Revenue		Proposed Revenue		Base Rate % Change	
20 KW or Greater				\$2,882,852		\$3,819,729		32.50%	
	Customer Charge per month	Monthly Minimum Bill per month	Facilities Charge per annual max. kW per month	Energy Charge per kWh		Demand Charge per kW			
				Summer	Winter	Summer	Winter		
Current Rate									
Secondary	\$12.00	Cust. + Facilities Charge	\$0.00	\$0.04083	\$0.04631	\$ 1.22	\$ 1.02		
Primary	\$12.00	Cust. + Facilities Charge	\$0.00 20 kW Minimum	\$0.03880	\$0.04374	\$ 1.17	\$ 0.97		
Proposed Rate									
Secondary	\$25.00	Cust. + Facilities Charge	\$1.00	\$0.03575	\$0.03544	\$ 3.60	\$ 2.18		
Primary	\$20.00	Cust. + Facilities Charge	\$0.67 20 kW Minimum	\$0.03458	\$0.03409	\$ 3.46	\$ 2.08		
Low Load Factor less than 15%						\$ 3.54	\$ 3.54		
Marginal Costs									
Secondary	\$32.57	Cust. + Facilities Charge	\$1.00	\$0.02713	\$0.02689	\$ 15.35	\$ 9.27		
Primary	\$21.82	Cust. + Facilities Charge	\$0.67	\$0.02624	\$0.02587	\$ 14.71	\$ 8.84		

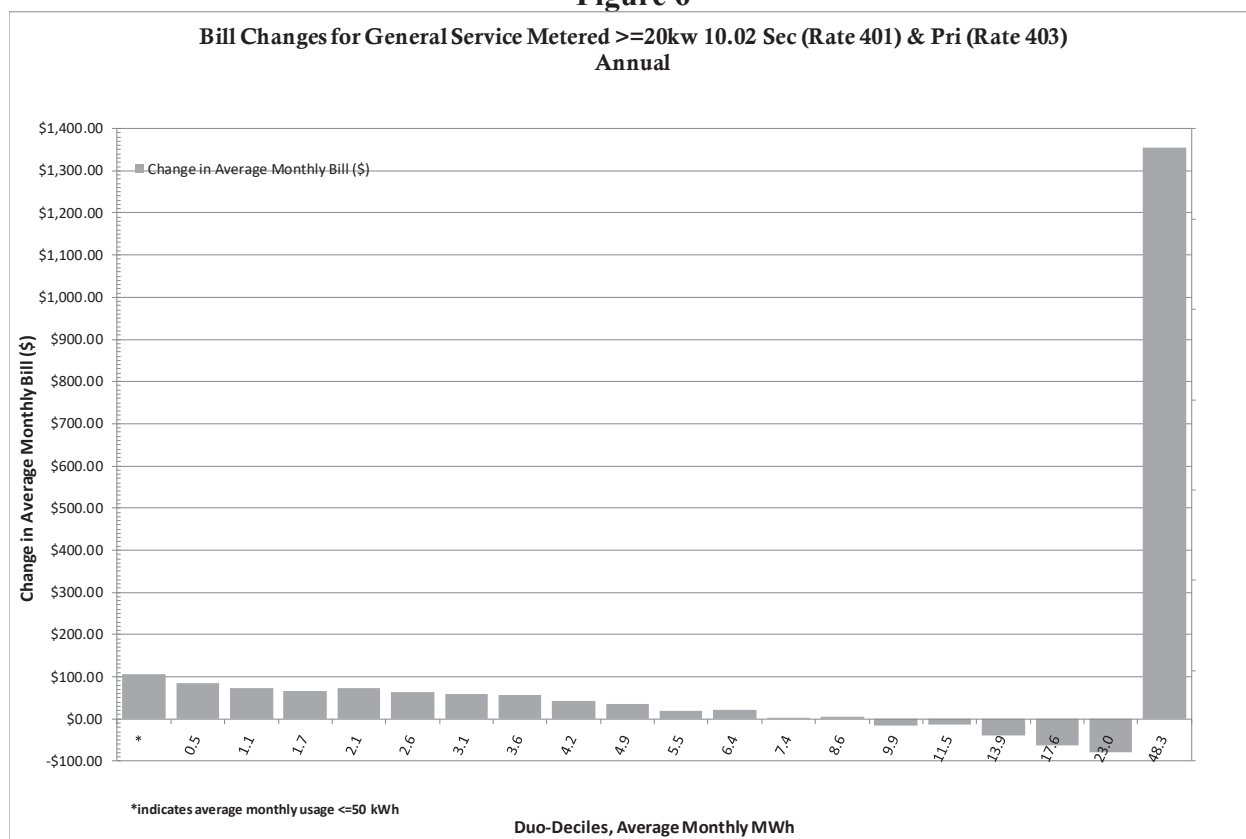
Q. WHAT ARE THE BILL IMPACTS FROM YOUR PROPOSED RATE CHANGES TO THIS RATE?

A. The figure below again shows a bifurcation of impact to customer in this class. The first 14 duo-deciles show increases, all of which are below \$110. The next five duo-deciles shows decreases, while the last one shows an increase.



1

**Figure 6**



2

3

4 Q. PLEASE DESCRIBE YOUR RATE DESIGN PROPOSAL FOR THE 10.03 GENERAL  
5 SERVICE-TIME OF USE RATE.

6 A. The proposed rate, shown in the table below, contains seasonally differentiated charges  
7 and sets the on-peak (declared peak) energy charges at full marginal cost (i.e. energy plus  
8 demand) expected in the hours likely to be defined as system peak hours. The declared  
9 peak hours are proposed to move from approximately 200 hours per year to  
10 approximately 100 hours per year. The proposed shoulder and off-peak energy charges  
11 are set above marginal energy costs to meet the revenue requirement not satisfied by  
12 other charges. This rate structure continues to give a strong, efficient, and transparent  
13 price signal to customers during critical hours. The rate includes a customer charge and  
14 sets the minimum bill at the sum of the customer charge, the facilities charge, and a  
15 minimum 20 kW demand (same concept as in the Large General Service, 10.04).

16 We are also proposing a slight modification to the classification of peak and off-  
17 peak hours under this rate by extending the time of day concept to Sundays.

**Table 11**  
Comparison of Current and Proposed 10.03 General Service Time of Use  
Rate and Marginal Costs

GENERAL SERVICE - TIME OF USE		Section 10.03		Forecasted Revenue		Proposed Revenue	Increase		
				\$0		\$0	N/A		
		Customer Charge per month	Minimum Bill per month	Facilities Charge per per KW month	Charge per kWh		Demand Charge per kW per mo.		
					Summer	Winter	Summer	Winter	
<b>Current Rate</b>							per seasonal max kW		
Seasonal Energy and Demand with Peak, Shoulder, Off Peak		\$19.00	Cust+Fac. +min. Demand	\$0.60	*Declared Intermediate Off-peak	\$0.17792 \$0.05117 \$0.00918	\$0.19084 \$0.04436 \$0.02659	NA \$2.81 \$0.00	NA \$1.45 \$0.00
*Declared energy rates include some Capacity costs.									
<b>Proposed</b>							per seasonal max kW		
Seasonal Energy and Demand with Peak, Shoulder, Off Peak		\$200.00	Cust+Fac. +min. Demand	\$1.00	*Declared Intermediate Off-peak	\$0.28829 \$0.03434 \$0.02295	\$0.30322 \$0.03403 \$0.02416	NA \$4.67 \$0.00	NA \$2.84 \$0.00
Low Load Factor less than 15%								\$3.54	\$3.54
*Declared energy rates include some Capacity costs.									
*Declared energy rates include some Capacity costs.									
<b>Marginal Costs</b>		Declared energy rates include 70%/30% capacity costs adjustment.			<b>Marginal Energy</b>		<b>Marginal Capacity</b>		
					\$0.28829 \$0.03096 \$0.02070	\$0.30322 \$0.03068 \$0.02179	Declared Interm. Off	\$0.00 \$4.67 \$0.08	\$0.00 \$2.84 \$2.62
		\$229.16		\$1.00					

Q. ARE YOU PROPOSING ANY OTHER CHANGES TO THE 10.03 GENERAL SERVICE TIME OF USE RATE?

A. Yes. We are proposing to add a low-load factor charge like the charge being proposed for the 10.02 General Service (20 kW or greater) rate.

Q. WHAT ARE THE BILL IMPACTS FROM THE PROPOSED 10.03 GENERAL SERVICE-TIME OF USE RATE?

A. Currently there are no customers on this rate; therefore, we cannot present the duo-decile chart. Bill impacts will depend on each customer's usage patterns (season, level, and frequency of use by each customer in the three different periods (on, shoulder, and off-peak). Therefore, there is a wide range of impacts that could be further influenced by how customers respond to these new prices.

**D. Large General Service Class**

Q. WHAT RATE SCHEDULES ARE INCLUDED IN THE LARGE GENERAL SERVICE CLASS?

A. There are five rates within the Large General Service Class: Large General Service (Section 10.04), Large General Service Time of Day (Section 10.05) and Standby Service

(Section 11.01), Real-Time Pricing Rider (Section 14.02), and a Large General Service Rider (Section 14.03).

Q. PLEASE DESCRIBE YOUR OVERALL RATE DESIGN PROPOSAL FOR THE LARGE GENERAL SERVICE CLASS.

A. OTP's proposal for the Large General Service Class continues the current designs, with adjustments to rate levels.

Q. PLEASE DESCRIBE YOUR RATE DESIGN PROPOSAL FOR THE 10.04 LGS RATE.

A. The proposed LGS rate continues with single block seasonal energy and demand structures. As shown in the table below, all seasonal energy and demand charges are set below marginal costs, with summer energy costs slightly higher than winter energy costs, consistent with the results of the 2018 Marginal Cost Study. Seasonal demand charges are set below marginal costs, with the differential between summer and winter demand charges increasing from proposed levels to reflect the difference in seasonal marginal costs.

The facilities charge continues to vary by size of customer (in terms of maximum annual kW) and by voltage level. These charges are set at 100 percent of marginal cost. The customer charge continues to move closer to marginal cost, which are near 100 percent. The minimum bill is set at the sum of the customer, facility, and demand charges. The proposed rate retains the minimum demand at 80 kW.

**Table 12**  
Comparison of Current and Proposed 10.04 Large General Service  
Rate and Marginal Costs

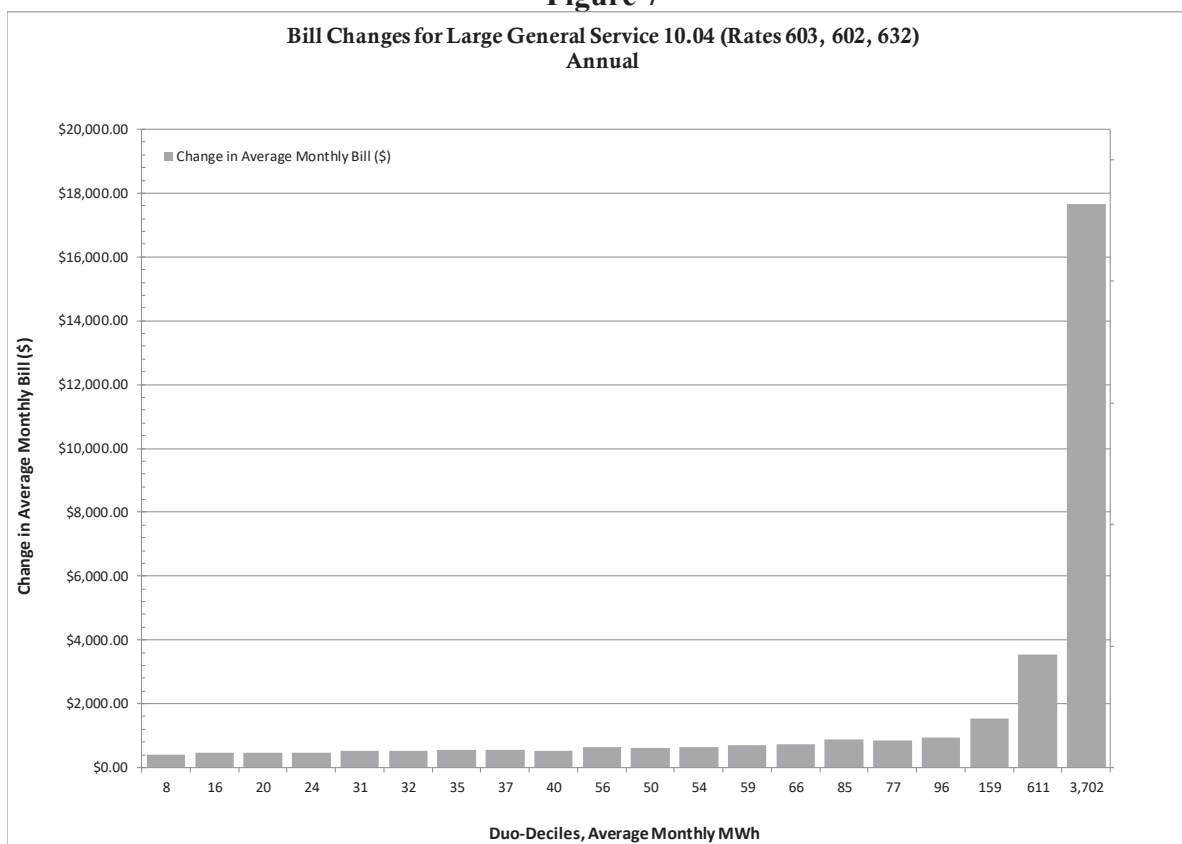
LARGE GENERAL SERVICE		Section 10.04		Forecasted Revenue		Proposed Revenue	Base Rate % Change	
				\$ 6,409,356		\$ 8,763,078	37%	
		Customer Charge per month	Minimum Bill per month	Facilities Charge per annual max. kW (minimum 80 kW) per month		Energy Charge per kWh		Demand Charge per kW
						Summer	Winter	Summer Winter
<b>SECONDARY 603</b>								
Current Rate		\$50.00	Cust+Fac+Demand		All Energy	\$0.01696	\$0.02046	\$7.29 \$4.63
			< 1000 kW:	\$0.33				
			> 1000 kW:	\$0.24				
Proposed - Secondary		\$215.00	Cust+Fac+Demand		All Energy	\$0.02462	\$0.02440	\$12.30 \$6.64
			< 1000 kW:	\$0.77				
			> 1000 kW:	\$0.57				
Marginal Costs		\$225.79	< 1000 kW:	\$0.77		\$0.02713	\$0.02689	\$15.35 \$9.27
			> 1000 kW:	\$0.57				
<b>PRIMARY 602</b>								
Current Rate		\$50.00	Cust+Fac+Demand	\$0.12	All Energy	\$0.01566	\$0.01882	\$7.00 \$4.40
Proposed - Primary		\$282.00	Cust+Fac+Demand	\$0.49	All Energy	\$0.02291	\$0.02258	\$10.58 \$6.34
Marginal Costs		\$292.96		\$0.49		\$0.02624	\$0.02587	\$14.71 \$8.84
<b>TRANSMISSION 632</b>								
Current Rate		\$50.00	Cust+Fac+Demand	\$0.00	All Energy	\$0.01352	\$0.01618	\$5.42 \$3.79
Proposed - Transmission		\$282.00	Cust+Fac+Demand	\$0.00	All Energy	\$0.02233	\$0.02182	\$8.91 \$4.24
Marginal Costs		\$292.96		\$0.00		\$0.02481	\$0.02424	\$11.01 \$5.54

Q. WHAT ARE THE BILL IMPACTS FROM YOUR PROPOSED 10.04 LGS RATE?

A. The figure below shows the annual average monthly bill impacts to the LGS Rate customers. Ninety percent of users will see an increase of less than \$2,000 per month, while the users in the last two groups will see larger increases due to higher usage levels.

1

**Figure 7**



2  
3

4 Q. PLEASE DESCRIBE YOUR RATE DESIGN PROPOSAL FOR THE 10.05 LARGE  
5 GENERAL SERVICE -- TIME-OF-DAY RATE.

6 A. OTP's proposal for the Large General Service Time of Day (LGS TOD) rate is to  
7 generally continue with the current design and adjust rate levels, as shown below.

8 We are also proposing to modify the time of day pricing periods under the LGS  
9 TOD rate to be consistent with those used in the 2018 Marginal Cost Study.<sup>5</sup> A prior  
10 analysis of OTP's marginal costs showed that the current time of day pricing periods  
11 should be updated to better reflect marginal costs. The current and proposed time of day  
12 pricing periods are shown in Exhibit\_\_\_(DGP-1), Schedule 7.

13 The table below shows the current and proposed LGS TOD rates.

<sup>5</sup> See Section II of the 2018 Marginal Cost Study.

**Table 13**  
Comparison of Current and Proposed 10.05 Large General Service Time of Day  
Rate and Marginal Costs

LARGE GENERAL SERVICE - TIME OF DAY				Section 10.05		Forecasted Revenue		Target Revenue		Base Rate % Change					
						\$75,529		\$103,435		36.95%					
Customer #	Cust. Charge per month	Monthly Min. Bill per month	Facilities Charge per annual max. kW (min. 80)	Energy Charge per kWh						Demand Charge per kW					
				Summer			Winter			Summer		Winter			
				PK 611	SH 615	OP 613	PK 611	SH 615	OP 613	PK 611	SH 615	OP 613	PK 611	SH 615	OP 613
SECONDARY															
Current Rate	\$70.00	Cust. + Facilities	\$0.33 < 1,000 kW	\$0.04649	\$0.02761	\$0.00292	\$0.03851	\$0.02289	\$0.01059	\$5.59	\$1.70	\$0.00	\$3.91	\$0.72	\$0.00
			\$0.24 >=1,000 kW												
Rate 1	\$215.90	Cust. + Facilities	\$0.76 < 1,000 kW	\$0.03685	\$0.02808	\$0.01877	\$0.03120	\$0.02783	\$0.01976	\$7.63	\$4.67	\$0.00	\$3.80	\$2.84	\$0.00
			\$0.57 >=1,000 kW												
Rate 2															
Marginal Costs	\$225.79		\$0.77 \$0.58	\$0.04064	\$0.03096	\$0.02070	\$0.03440	\$0.03068	\$0.02179	\$10.60	\$4.67	\$0.08	\$3.80	\$2.84	\$2.62
PRIMARY															
				PK 610	SH 614	OP 612	PK 610	SH 614	OP 612	PK 610	SH 614	OP 612	PK 610	SH 614	OP 612
Current Rate	\$70.00	Cust. + Facilities	\$0.12	\$0.04401	\$0.02595	\$0.00221	\$0.03600	\$0.02117	\$0.00943	\$5.37	\$1.83	\$0.00	\$3.72	\$0.68	\$0.00
Rate 1	\$282.00	Cust. + Facilities	\$0.48	\$0.03549	\$0.02713	\$0.01822	\$0.02988	\$0.02675	\$0.01906	\$6.10	\$4.48	\$0.00	\$3.62	\$2.72	\$0.00
Marginal Costs	\$292.96		\$0.58	\$0.03914	\$0.02992	\$0.02010	\$0.03295	\$0.02949	\$0.02102	\$10.17	\$4.48	\$0.06	\$3.62	\$2.72	\$2.50
TRANSMISSION															
				PK 639	SH 637	OP 640	PK 639	SH 637	OP 640	PK 639	SH 637	OP 640	PK 639	SH 637	OP 640
Current Rate	\$70.00	Cust. + Facilities	\$0.00	\$0.04001	\$0.02324	\$0.00100	\$0.03200	\$0.01840	\$0.00752	\$4.35	\$1.07	\$0.00	\$3.23	\$0.57	\$0.00
Rate 1	\$282.00	Cust. + Facilities	\$0.00	\$0.03332	\$0.02561	\$0.01733	\$0.02781	\$0.02504	\$0.01794	\$5.14	\$3.77	\$0.00	\$2.75	\$1.49	\$0.00
Marginal Costs	\$292.96		\$0.00	\$0.03674	\$0.02824	\$0.01911	\$0.0307	\$0.0276	\$0.0198	\$7.14	\$3.77	\$0.10	\$2.75	\$1.49	\$1.31

Q. HAVE YOU INCLUDED A BILL IMPACTS ANALYSIS FOR THE 10.05 LARGE GENERAL SERVICE – TIME-OF-DAY RATE?

A. No. There are currently two customers on this rate. Individualized bill analysis could compromise the confidentiality of those customers. Bill impacts will depend on customer usage patterns (season, level, and frequency of use in the three different periods (on, shoulder, and off-peak)). Therefore, there is a wide range of impacts that could be further influenced by how a customer responds to these new prices.

Q. PLEASE DESCRIBE YOUR RATE DESIGN PROPOSAL FOR THE 11.01 STANDBY RATE.

A. OTP proposes to continue with the current design but does propose to adjust rate levels. The proposed Standby Service rate, as shown in the table below, provides three services under one rate schedule. These services are Backup, Scheduled Maintenance, and Supplemental Service:

- Backup Services is the energy and demand supplied by the utility during unscheduled outages of a Customer's generator.

- Scheduled Maintenance Service is the energy and demand supplied by the utility during scheduled outages of a Customer's generator.
- Supplemental Service is the energy and demand supplied by the utility in addition to the capability of the on-site generator.

**Table 14**  
Comparison of Current and Proposed Standby Service  
Rate and Marginal Costs

Minnesota Standby Service OPT A			Section 11.01		Forecasted Revenue		\$0.00		Proposed		\$0.00		Increase		0.00%	
SECONDARY	Cust. Charge per month	Monthly Min. Bill per month	Facilities Charge per annual max. kW (min. 80)	Energy Charge per kWh						Demand Charge per kW						
				Summer			Winter			Summer			Winter			
				PK	SH	OP	PK	SH	OP	PK	SH	OP	PK	SH	OP	
Current Rate	\$199.00	Cust. + Facilities	\$0.52830	0.04649	0.02761	0.00292	0.03851	0.02289	0.01059	\$0.7138	\$0.00	\$0.00	\$0.7373	\$0.00	\$0.00	
		Reserve Charge per kW		\$0.1677			\$0.0537			\$0.7138			\$0.7373	\$ per kW per day		
Proposed	\$215.95	Cust+Reservation+Facilities	\$0.7560	\$0.03685	\$0.02808	\$0.01877	\$0.03120	\$0.02783	\$0.01976	\$0.5246	\$0.00	\$0.00	\$0.4179	\$0.00	\$0.00	
		Reserve Charge per kW		\$0.4235			\$0.1024			\$0.5246			\$0.4179	\$ per kW per day		
Marginal Costs	\$215.95		\$0.76	\$0.04875	\$0.03708	\$0.02090	\$0.04067	\$0.03740	\$0.02499	\$0.52	\$0.00	\$0.00	\$0.42	\$0.00	\$0.00	
PRIMARY																
Current Rate	\$199.00	Cust. + Facilities	\$0.25430	\$0.04401	\$0.02595	0.00221	\$0.03600	\$0.02117	0.00943	\$0.6838	\$0.00	\$0.00	\$0.7003	\$0.00	\$0.00	
		Reserve Charge per kW		\$0.1604			\$0.0510			\$0.6838			\$0.7003	\$ per kW per day		
Proposed	\$282.08	Cust+Reservation+Facilities	\$0.5730	\$0.03549	\$0.02713	\$0.01822	\$0.02988	\$0.02675	\$0.01906	\$0.5023	\$0.00	\$0.00	\$0.3964	\$0.00	\$0.00	
		Reserve Charge per kW		\$0.4054			\$0.0980			\$0.5023			\$0.3964	\$ per kW per day		
Marginal Costs	\$282.08		\$0.57	\$0.03914	\$0.0299	\$0.02010	\$0.03295	\$0.02949	\$0.02102	\$0.50	\$0.00	\$0.00	\$0.40	\$0.00	\$0.00	
TRANSMISSION																
Current Rate	\$199.00	Cust. + Facilities	\$0.00	\$0.04001	\$0.02324	\$0.00100	\$0.03200	\$0.01840	\$0.00752	\$0.6367	\$0.00	\$0.00	\$0.6433	\$0.00	\$0.00	
		Reserve Charge per kW		\$0.1490			\$0.0468			\$0.6367			\$0.6433	\$ per kW per day		
Proposed	\$282.08	Cust+Reservation+Facilities	\$0.00	\$0.03332	\$0.02561	\$0.01733	\$0.02781	\$0.02504	\$0.01794	\$0.4674	\$0.00	\$0.00	\$0.3634	\$0.00	\$0.00	
		Reserve Charge per kW		\$0.3769			\$0.0911			\$0.4674			\$0.3634	\$ per kW per day		
Marginal Costs	\$282.08		N/A	\$0.0367	\$0.02824	\$0.01911	\$0.0307	\$0.0276	\$0.0198	\$0.47	\$0.00	\$0.00	\$0.36	\$0.00	\$0.00	

Q. WHAT ARE THE BILL IMPACTS FROM YOUR PROPOSED 11.01 STANDBY SERVICE RATES?

A. No customers are currently taking Standby Service, therefore there are no bill impacts available for the similar reasons as mentioned above for the LGS TOD rate.

#### E. Irrigation Class

Q. WHAT RATE SCHEDULES ARE YOU INCLUDING IN THE IRRIGATION SERVICE CLASS?

A. There is only one rate schedule in the Irrigation Class, the Irrigation Service rate (Section 11.02). However, there are two service options offered under this rate.



1 Q. PLEASE DESCRIBE YOUR RATE DESIGN PROPOSAL FOR THE 11.02  
2 IRRIGATION SERVICE RATE.

3 A. OTP's proposed rate, shown in the table below, maintains the current two service options,  
4 both of which provide service from April 15 through November 1. The proposal for both  
5 Option 1 and Option 2 retain the customer-specific facilities charges included in the  
6 current rate.

7 The Option 1 (Non-Time-Of-Use) rate continues with seasonal energy charges.  
8 The Option 2 (Time-of-Use) rate consists of energy charges for off-peak, intermediate,  
9 and on-peak or "declared" periods. The declared hours are defined by OTP when the  
10 system is experiencing peak conditions. Like the General Service Time of Use rate, the  
11 declared peak hours are proposed to move from approximately 200 hours per year to  
12 approximately 100 hours per year. The proposal for Irrigation Option 2 is to set the price  
13 for hours when OTP is experiencing peak conditions at 100 percent of marginal cost  
14 (energy plus capacity), thereby giving Option 2 irrigation customers a transparent signal  
15 to curtail use during peak periods. These "on peak" or "declared-peak" marginal costs are  
16 the average marginal costs expected in the hours defined to be declared peak by OTP, and  
17 they vary by season. In the intermediate hours (which include the remainder of peak  
18 period hours and shoulder hours), energy and demand charges will apply. In the off-peak  
19 hours, only energy charges apply. The customer charge is set at near 50 percent of  
20 marginal costs for secondary customers and over 70% for primary customers.

21 We are also proposing a slight modification to the classification of peak and off-  
22 peak hours under this rate by extending the time of day concept to Sundays. And the  
23 proposed tariff sheets provide clarifications for the process of notifying customers of  
24 declared peak periods.



**Table 15**  
Comparison of Current and Proposed 11.02 Irrigation Service Option 1 & 2  
Rate and Marginal Costs

Section 11.02		OPTION#1					OPTION#2				
Irrigation Option #1		Irrigation Option #2		Forecasted Revenue		Proposed Revenue	Base Rate % Change	Forecasted Revenue		Proposed Revenue	Base Rate % Change
				\$10,157		\$13,637	34.46%	\$3,951		\$5,518	39.67%
		Cust. Charge per month	Monthly Min. Bill per month	Facilities Charge per annual max. kW (min. 80)		Energy Charge per kWh				Demand Charge per HP	
					Summer		Winter			Summer	Winter
SECONDARY											
Current Rate		\$2.00	Cust.+Fac	Customer Specific		\$0.03797		\$0.01644		N/A	N/A
OPTION 1											
Proposed Rate		\$12.00	Customer + Facilities	Customer Specific		\$0.05567		\$0.03960		N/A	N/A
Marginal Costs											
		\$24.65				\$0.04810		\$0.03960		N/A	N/A
					Declared Peak	Intermediate	Off-Peak	Declared Peak	Intermediate	Off-Peak	Declared Peak
Current Rate		\$6.00	Cust.+Fac	Customer Specific	\$0.17453	\$0.04603	\$0.00100 per kWh	\$0.19521	\$0.03596	\$0.00100	N/A
OPTION 2											
Proposed Rate		\$18.00	Cust.+Fac	Customer Specific	\$0.28829	\$0.06908	\$0.02685	\$0.28247	\$0.04032	\$0.02935	N/A
Marginal Costs											
		\$24.65			\$0.28829	\$0.05378	\$0.02090	\$0.25247	\$0.04032	\$0.02935	

**F. Outdoor Lighting Class**

Q. WHAT RATE SCHEDULES ARE YOU INCLUDING IN THE LIGHTING SERVICE CLASS?

A. There are two rates in the Outdoor Lighting Class: Outdoor Lighting – Energy Only (Section 11.03) and Outdoor Lighting (Section 11.04). OTP is proposing to close the Outdoor Lighting (Section 11.04) to new customers and replacements. This proposal is discussed further in Section V.D, below.

Q. PLEASE DESCRIBE YOUR RATE DESIGN PROPOSAL FOR THE 11.03 OUTDOOR LIGHTING-ENERGY ONLY RATE (RATE CODES 748 AND 749 AND 744).

A. OTP's proposal is shown in the table below. Customer charge will be unchanged and would remain at \$2.50 per month. Energy charges were increased to meet the class revenue requirement.

**Table 16**  
Comparison of Current and Proposed 11.03 Outdoor Lighting Energy-Only  
Rate and Marginal Costs

<b>Energy Only Lighting - 11.03</b>				
	<b>Customer Charge per month</b>	<b>Monthly Minimum Bill per month</b>	<b>Facilities Charge per month</b>	<b>Energy Charge per kWh</b>
<b>Metered</b>				
Current Rate	\$2.50	\$2.50	\$0.00	0.03771
Proposed Rate	\$2.50	\$2.50	\$0.00	0.04144
Marginal Costs	\$0.30		\$10.75	\$0.02945
<b>Non-Metered</b>				
Current Rate	Connected kW x	\$12.88	Current rate * 4100 hrs in year / 12 months	
Proposed Rate	Connected kW x	\$14.16	Current rate * 4100 hrs in year / 12 months	

Q. WHAT ARE THE BILL IMPACTS OF THE PROPOSED 11.03 OUTDOOR LIGHTING-ENERGY ONLY RATE.

A. The overall bill impacts for the rate are up to 6.5 percent per customer. Savings is dependent upon the usage level of each customer.

Q. WHAT ARE THE BILL IMPACTS OF THE PROPOSED 11.04 OUTDOOR LIGHTING RATE?

A. The bill impacts for each current lighting fixture, on a connected kW basis, are 6.5 percent.

**G. Other Public Authority Service Class**

Q. WHAT RATE SCHEDULES ARE YOU INCLUDING IN THE OTHER PUBLIC AUTHORITY SERVICE CLASS?

A. There are two rates in the Other Public Authority Class: Municipal Pumping Service (Section 11.05) and Civil Defense – Fire Siren Service (Section 11.06).

Q. PLEASE DESCRIBE YOUR RATE DESIGN PROPOSAL FOR THE MUNICIPAL PUMPING SERVICE.

A. As shown in the table below, the customer charge is set at approximately 50 percent of marginal costs. The new facilities charges are set at marginal costs. The energy charges increase to slightly above marginal cost.

**Table 17**  
Current and Recommended 11.05 Municipal Pumping  
Rates and Marginal Costs

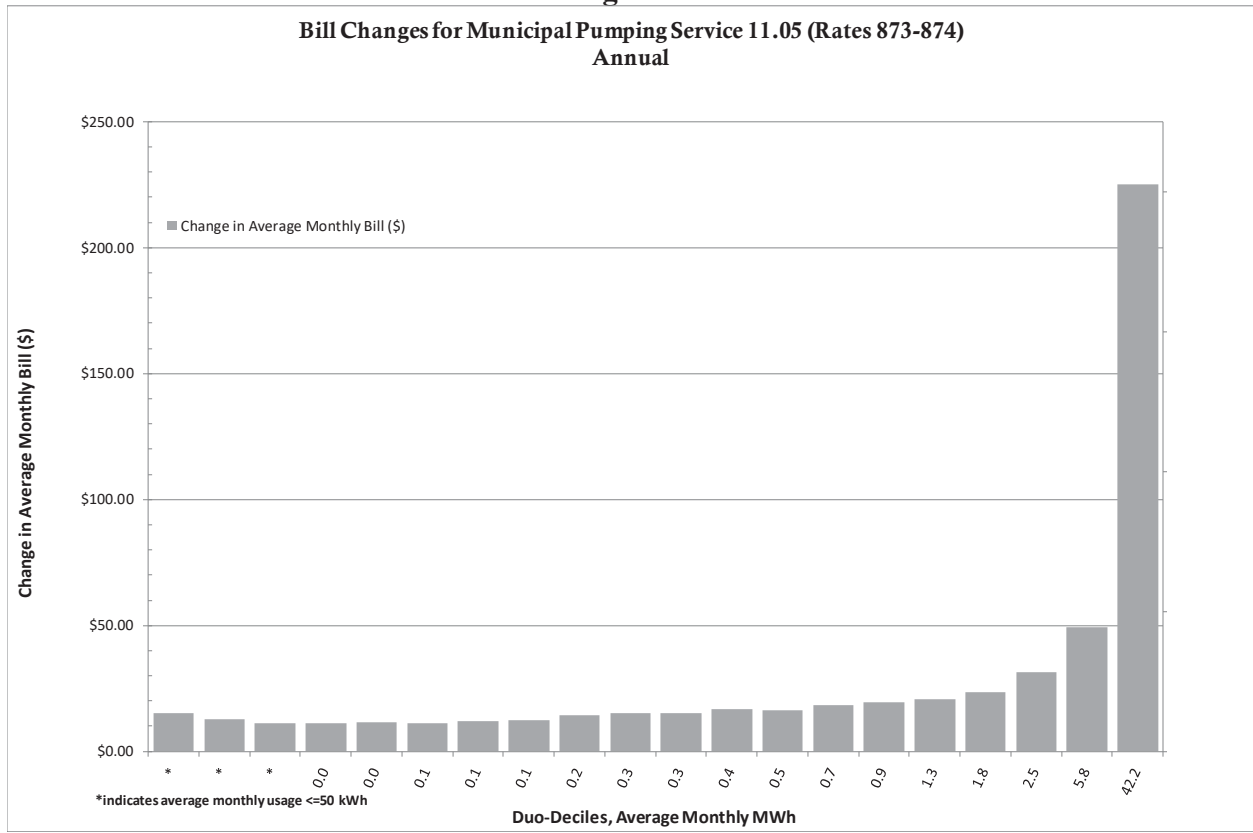
Municipal Pumping	Section 11.05	Forecasted Revenue		Proposed Revenue		Base Rate % Change	
		\$140,786		\$205,126		45.70%	
Comparison of Current Rate, Recommended Rate and Marginal Cost Municipal Pumping							
		Customer \$ per month	Minimum Bill \$ per month	Facilities Charge \$ per month		Summer \$ per kWh	Winter per month
Current Rate							
Secondary	\$3.00	Cust + Fac	per Annual Max kW per month	\$0.14	\$0.03251	\$0.03407	
Primary	\$3.00	Cust + Fac	per Annual Max kW per month	\$0.09	\$0.03061	\$0.03178	
Proposed Rate							
Secondary	\$12.00	Cust + Fac	per Annual Max kW per month	\$1.00	\$0.04837	\$0.03983	
Primary	\$12.00	Cust + Fac	per Annual Max kW per month	\$0.67	\$0.04660	\$0.03821	
Marginal Costs							
\$27.19 Customer \$ per month		Demand:		Secondary Primary	\$1.00 \$0.67	Energy:	
				Secondary Primary	\$0.04810 \$0.04635	\$0.03960 \$0.03800	

Q. WHAT ARE THE BILL IMPACTS OF YOUR RECOMMENDED 11.05 MUNICIPAL PUMPING RATE?

A. The figure below reflects varied bill impacts, estimated based on similar usage and demand characteristics, as the consumption levels of customers vary significantly under this rate. Most of the customers have bill impacts of less than \$20.00 per month.

1

**Figure 8**



2

3

4

5 Q. PLEASE DESCRIBE YOUR RATE DESIGN PROPOSAL FOR THE 11.06 CIVIL  
6 DEFENSE-FIRE SIREN SERVICE RATE.

7 A. The proposed Civil Defense-Fire Siren Rate components are shown in the table below.

**Table 18**  
Current and Recommended 11.06 Civil Defense-Fire Sire Service  
Rate and Marginal Cost

Section 11.06				
Civil Defense Fire Sirens				
SECONDARY	Customer Charge per month	Monthly Minimum Bill per month	Facilities Charge per month	Charge per HP
Current Rate	\$1.00	Customer Charge	\$0.00	\$0.54324
Proposed Rate	\$2.50	Customer Charge	\$0.00	\$0.61978
Marginal Costs	\$0.30			\$0.03183

Q. WHAT ARE THE BILL IMPACTS OF THE PROPOSED CIVIL DEFENSE-FIRE SERVICE RATE SCHEDULE?

A. The bill impacts are presented in a simple monthly bill comparison in the figure below. The greatest annual dollar impact is \$2.27 per month.

**Figure 9**  
**Monthly Bill Impacts - 11.06 Civil Defense-Fire Siren Service**

Siren HP	Monthly Impacts		
	Current Bill	Proposed Bill	Difference
1	\$ 1.54	\$ 3.12	\$ 1.58
1.5	\$ 1.81	\$ 3.43	\$ 1.61
2	\$ 2.09	\$ 3.74	\$ 1.65
3	\$ 2.63	\$ 4.36	\$ 1.73
4	\$ 3.17	\$ 4.98	\$ 1.81
4.5	\$ 3.44	\$ 5.29	\$ 1.84
5	\$ 3.72	\$ 5.60	\$ 1.88
6.5	\$ 4.26	\$ 6.22	\$ 1.96
7	\$ 4.80	\$ 6.84	\$ 2.04
7.5	\$ 5.07	\$ 7.15	\$ 2.07
10	\$ 6.43	\$ 8.70	\$ 2.27

**H. Water Heating Service Class**

Q. WHAT RATE SCHEDULES ARE YOU INCLUDING IN THE WATER HEATING SERVICE CLASS?

A. There is only one rate in the Water Heating Class, the Water Heating – Controlled Service Rider (Section 14.01).

Q. PLEASE DESCRIBE YOUR RATE DESIGN PROPOSAL FOR THE 14.01 WATER HEATING-CONTROLLED SERVICE RIDER.

A. The proposal for the Separately Metered Water Heating Control Service (Rate Code 71-191) shown in the table below increases the customer charge to approximately 71 percent of marginal cost, retains the current method for calculating the Minimum Bill, and sets both seasonal energy charges at levels necessary to match rate revenues to the rate's revenue requirement. The marginal costs of providing service to customers on this rate are lower than the marginal cost for standard rates because OTP controls the water heaters during high-cost periods.

**Table 19**  
Current and Proposed 14.01 Water Heating-Controlled Service Rider  
Rate and Marginal Costs

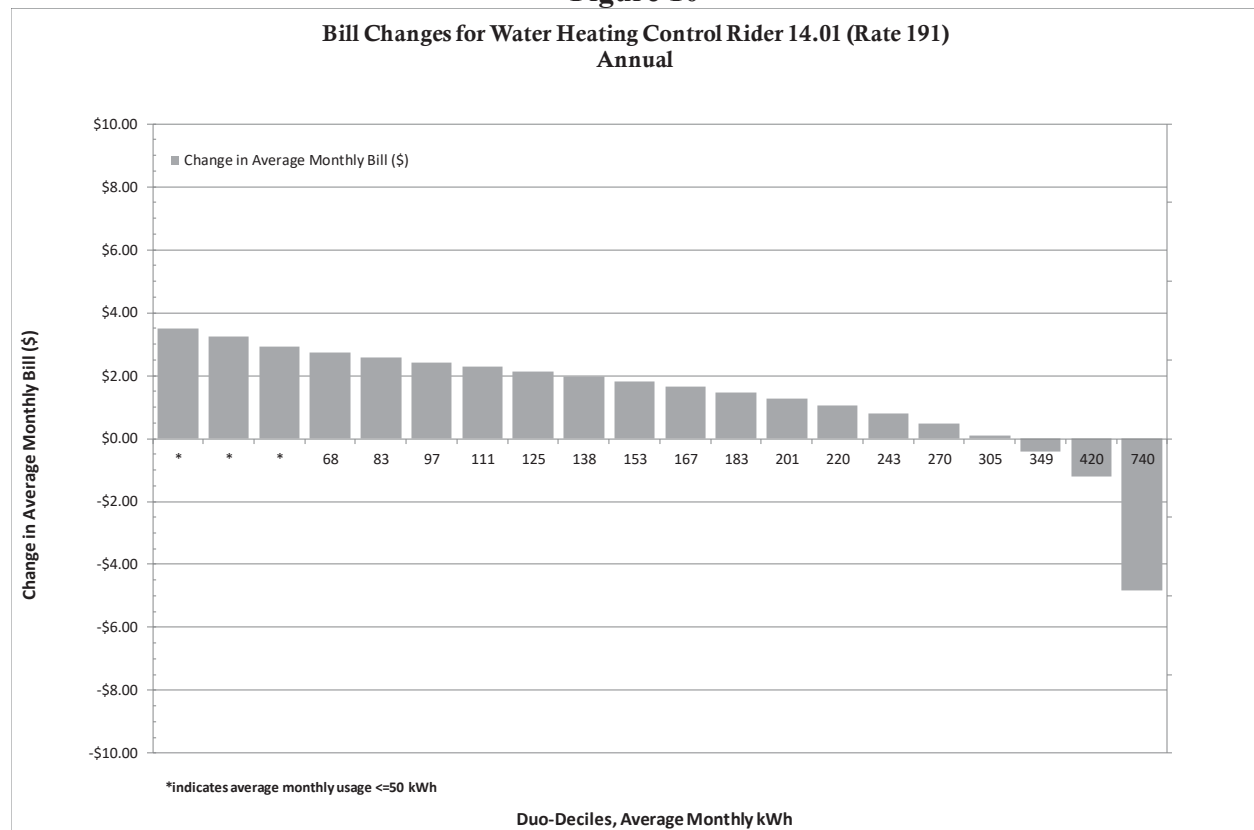
		Forecasted Revenue	Proposed Revenue	Base Rate % Change	
Water Heating Control (Off-Peak)	Section 14.01	\$216,571	\$278,149	28.4%	
	Customer Charge per month	Monthly Minimum Bill per month	Facilities Charge per month	Energy Charge per kWh	
				Summer	Winter
Current	Customer Charge, Seasonal Energy	\$2.50	Cust. + Facilities	\$0.02776	\$0.03143
Proposed Rate	Customer Charge, Seasonal Energy	\$4.00	Cust. + Facilities	\$2.00	\$0.02762
				\$0.02371	
Marginal Costs		\$5.63		\$6.05	\$0.04051
				\$0.03478	

The Water Heating Credit Control Service (Rate Code 71-192) is essentially a direct load-control program similar to direct load-control of central air conditioners. Under the rate, in exchange for allowing OTP to interrupt the water heating service during high-cost periods, OTP compensates the customer in the form of a bill credit. The credit increases to \$8.00 per month.

Q. WHAT ARE THE BILL IMPACTS OF THE PROPOSED 14.01 WATER HEATING-CONTROLLED SERVICE RIDER?

A. Under OTP's proposal, shown in the figure below, no Separately Metered Water Heating Control Service (Rate Code 71-191) customer sees a monthly increase of more than \$4.00. The bill impacts for the Water Heating Credit Control Service (Rate Code 71-192), not shown in the figure below, will increase the credit by \$4.00, thereby lowering the customers' standard firm service total bill by \$8.00 per month.

**Figure 10**



**I. Controlled Service – Interruptible Class**

Q. WHAT RATE SCHEDULES ARE YOU INCLUDING IN THE CONTROLLED SERVICE - INTERRUPTIBLE CLASS?

A. There are three current rates in the Interruptible Service Class: Controlled Service – Interruptible Load (CT Metering (Large Dual Fuel) – Option 1, Section 14.04) Rider; Controlled Service – Interruptible Load (Self-contained metering (Small Dual Fuel), Section 14.05); and Controlled Service – Interruptible Load (CT Metering (Large Dual Fuel) – Option 2, Section 14.04).

Q. PLEASE DESCRIBE YOUR RATE DESIGN PROPOSAL FOR THE 14.04 CONTROLLED SERVICE-INTERRUPTIBLE LOAD (CT METERING) RIDER, OPTION 1.

A. The proposed Controlled Service – Option 1 Rider, shown in the table below, includes increases to customer and facilities charges. The customer charge is set at 73 percent of marginal cost while the facility charge is set at 65 percent of marginal costs. The energy rate is at about 33 percent of marginal costs. The penalty rate for energy consumed during control periods is based on the total marginal cost over a year and separated into summer and winter seasons. The penalty rate per kWh has been calculated based on the hourly marginal costs during periods usage would be controlled. Fundamentally, the penalty rate charges customers for unauthorized use during control periods.

**Table 20**  
Current and Proposed  
Option 1 Controlled Service-Interruptible Load (CT Metering) Rider 14.04  
Rate and Marginal Costs

Large Dual Fuel - Option 1		Section 14.04		Forecasted Revenue	Proposed Revenue	Base Rate % Change
				\$67,155	\$111,282	65.7%
Controlled Service - Interruptible - (assumes all customers have CT metering)						
	Customer Charge per month	Monthly Minimum Bill per month	Facilities Charge	Energy Charge per kWh		
				Summer	Winter	
Current Rate	\$5.00	Cust. + Facilities	\$0.12 per kW	All kWh Penalty kWh	\$0.00629 \$0.15516	\$0.00895 \$0.15839
Proposed Rate	\$15.00	Cust. + Facilities	\$0.50 per kW	All kWh Penalty kWh	\$0.01346 \$0.26749	\$0.01128 \$0.17205
Marginal Costs	\$20.46	<300 kW >=300 kW	\$0.77 \$0.77	All kWh Penalty kWh	\$0.03872 \$0.26749	\$0.03245 \$0.17205

Q. PLEASE DESCRIBE YOUR RATE DESIGN PROPOSAL FOR THE 14.04 CONTROLLED SERVICE-INTERRUPTIBLE LOAD (CT METERING) RIDER, OPTION 2.

A. As shown in the table below, the customer charge is set at approximately 73 percent of marginal costs while the facility charge is bifurcated at 65 percent of marginal cost below 300 kW and 100 percent above 300 kw. The energy rate is at about 27 percent of marginal costs.



**Table 21**  
**Current and Proposed**  
**Option 2 Controlled Service-Interruptible Load**  
**(CT Metering) Rider Section 14.04**  
**Rate and Marginal Costs**

Large Dual Fuel - Option 2		Section 14.04		Forecasted Revenue		Proposed Revenue		Base Rate % Change	
				\$1,962.8		\$3,527.6		79.7%	
Controlled Service-Interruptible (assumes all customers have CT metering)									
		Customer Charge per month	Monthly Minimum Bill per month	Facilities Charge	Energy Charge per kWh		Demand Charge per kW		
					Summer	Winter	Summer	Winter	
CURRENT RATE OPTION 2									
Secondary	Seasonal Energy, kW Facilities All kWh	\$6.00	Customer + Facilities charge	per annual max. kW per month (\$ per Month)	\$0.00856	\$0.01142	\$7.29	\$4.63	
			per kW	\$0.12					
SECONDARY									
Proposed Rate		\$15.00	Customer + Facilities charge	per annual max. kW per month	\$0.01346	\$0.01128	\$12.30	\$6.64	
			per kW	\$0.50					
Marginal Costs		\$20.46	<300 kW >=300 kW	\$0.77 \$0.51	\$0.04810	\$0.03960	\$ 15.35	\$ 9.27	
(Plus 5% firm energy charge)									

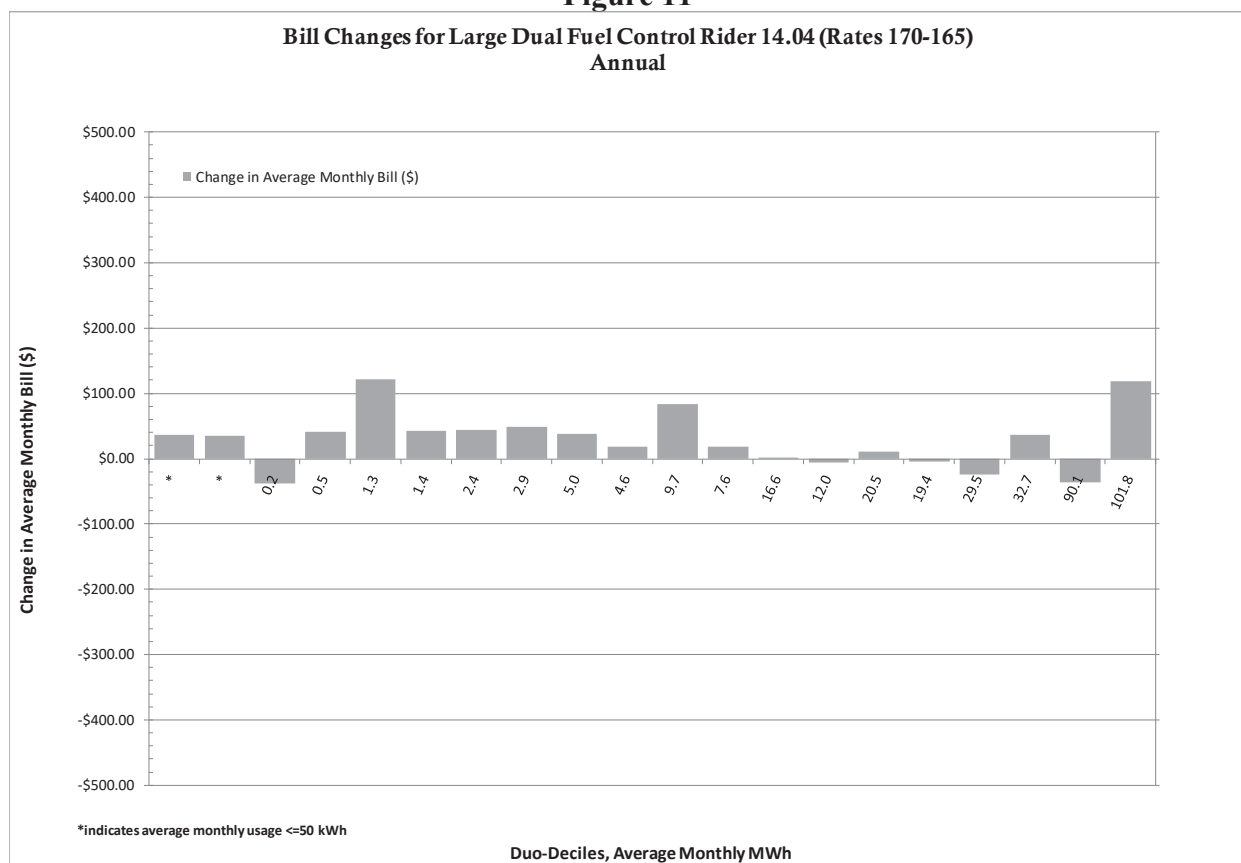
Q. WHAT ARE THE BILL IMPACTS OF THE PROPOSED 14.04 CONTROLLED INTERRUPTIBLE LOAD (CT METERING) RIDER – OPTIONS 1 AND 2?

A. As shown in the figure below the proposed rate for Option 1 shows 65 percent of the customers with average annual monthly increases of less than \$150.

The duo decile figure for proposed Option 2 was not developed. Only one customer takes service on this rate.

1

**Figure 11**



2

3

4 Q. PLEASE DESCRIBE YOUR RATE DESIGN PROPOSAL FOR THE 14.05  
5 CONTROLLED SERVICE-INTERRUPTIBLE LOAD (SELF-CONTAINED  
6 METERING) RIDER.

7 A. As shown in the table below, the customer charge is set at approximately 125 percent of  
8 marginal costs while the facility charge is bifurcated at 78 percent of marginal cost below  
9 5,000 kW and 20 percent above 5,000 kW. The energy rate is at about 35 percent of  
10 marginal costs. The penalty for energy used during a control period is intended to deter  
11 customers from unauthorized use during control periods.

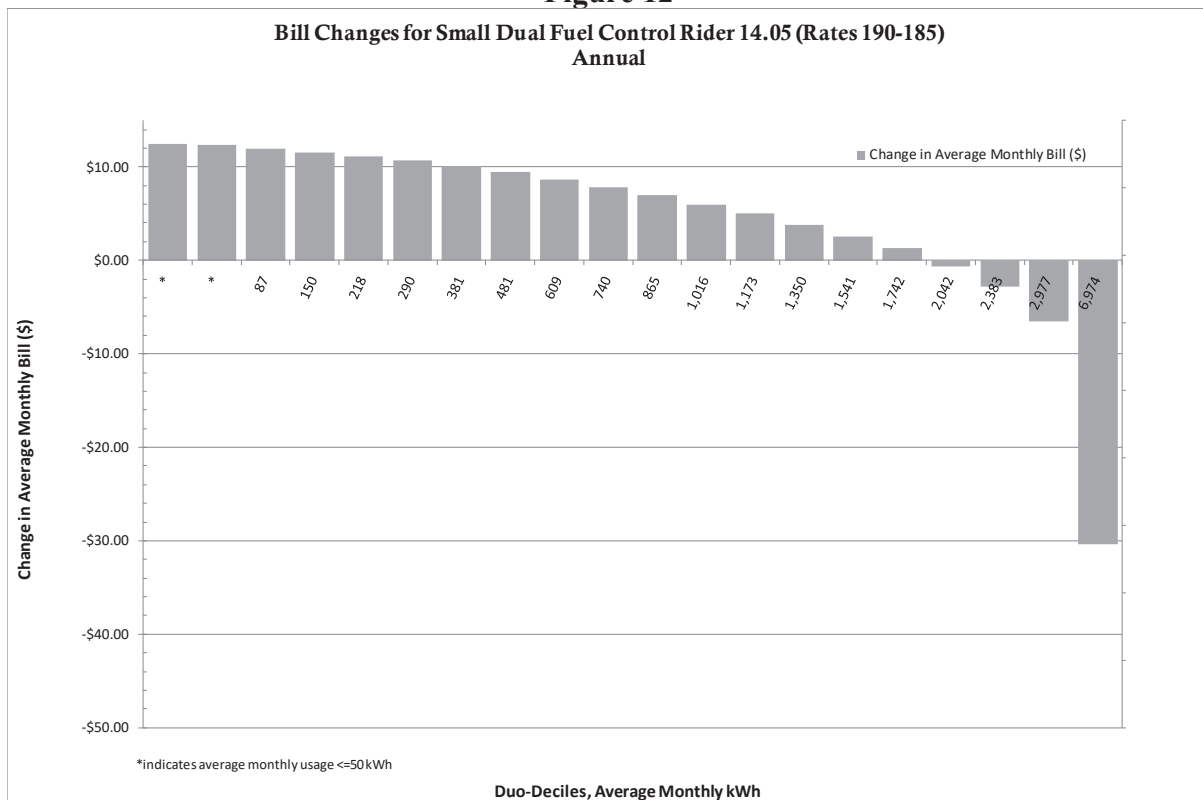
**Table 22**  
Current and Proposed 14.05 Controlled Service-Interruptible Load (Self-Contained) Rider  
Rate and Marginal Costs

Small Dual Fuel - Self Contained Metering		Section 14.05		Forecasted Revenue	Proposed Revenue	Base Rate % Change	
				\$286,114	\$421,641	47.37%	
Controlled Service - Interruptible - SDF, Self-Contained: (assumes all customers do not have CT metering)							
	Customer Charge per month	Monthly Minimum Bill per month	Facilities Charge per customer per month		Energy Charge per kWh		
					Summer	Winter	
Current Rate	\$2.00	Cust. + Facilities Charge	Fixed Facilities	\$5.00	All kWhs \$0.01050	\$0.01386	
					Penalty kWhs \$0.16403	\$0.17697	
Proposed Rate	\$10.00	Cust. + Facilities Charge	Fixed Facilities	\$9.50	All kWhs \$0.01456	\$0.01220	
					Penalty kWhs \$0.26749	\$0.17205	
Marginal Costs	\$8.02		<5000 kWh in all months \$12.10		All kWhs \$0.03872	\$0.03245	
			> 5000 kWh in any month \$48.07		Penalty kWhs \$0.26749	\$0.17205	

Q. WHAT ARE THE BILL IMPACTS OF THE PROPOSED 14.05 CONTROLLED INTERRUPTIBLE LOAD (SELF-CONTAINED) RIDER?

A. The figure below shows 80 percent of the class customers have annual average bill impacts under \$14.00 per month. The remaining 20 percent of customers will see some savings.

**Figure 12**



**J. Deferred Load Service Class**

Q. WHAT RATE SCHEDULES ARE YOU PROPOSING TO INCLUDE IN THE DEFERRED LOAD SERVICE CLASS?

A. There are two rates in the Deferred Load Service Class: Controlled Service – Deferred Load Rider (Section 14.06) and Fixed Time of Service Rider (Section 14.07).

Q. PLEASE DESCRIBE YOUR RATE DESIGN PROPOSAL FOR THE 14.06 DEFERRED LOAD SERVICE RIDER.

A. The proposed Deferred Load Service Rider, as shown in the table below, moves the customer charge to approximately 95 percent of marginal costs and increases the facilities charge from \$4.00 per month to \$11.00 per month, at approximately 90 percent of the urban marginal cost. Seasonally differentiated energy charges in the proposed design were adjusted to account for the change in the customer and facilities charges.

The penalty for energy used during a control period is intended to deter customers from unauthorized use during control periods.

**Table 23**  
Current and Proposed 14.06 Deferred Load Rider Rates and Marginal Costs

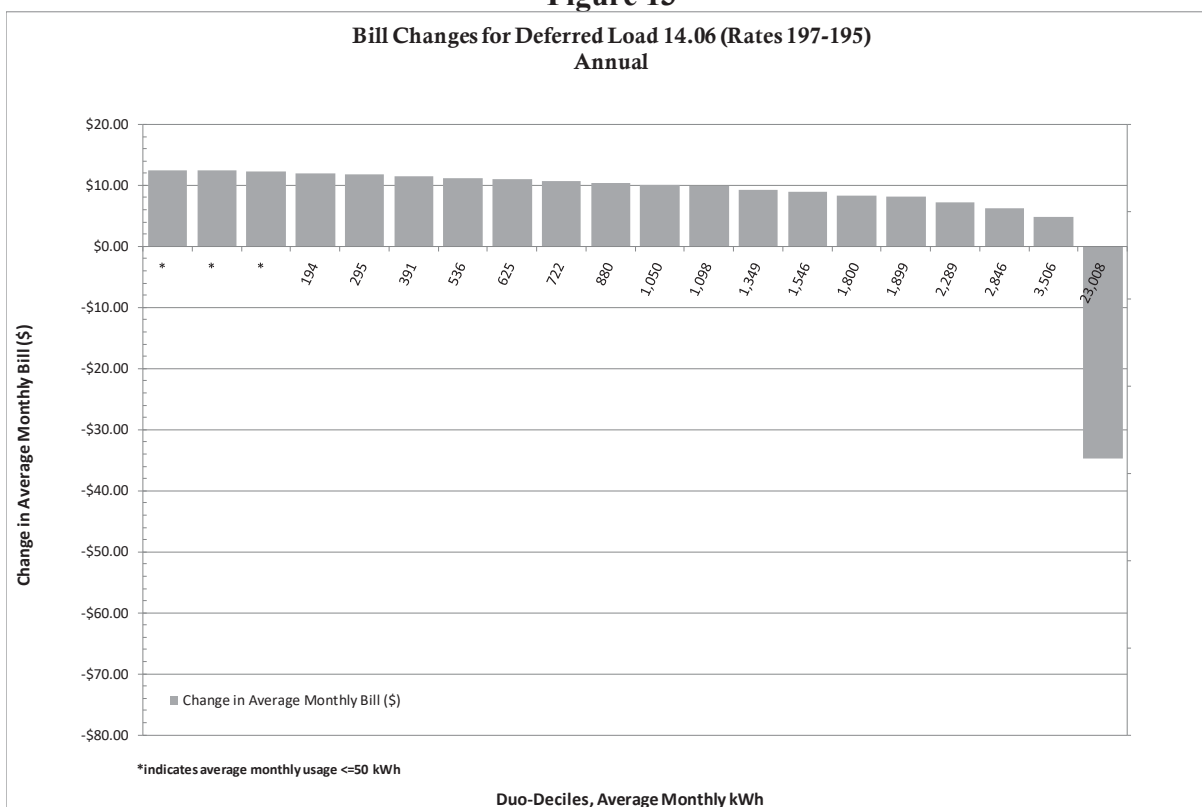
Controlled Service - Deferred Load		Section 14.06		Forecasted Revenue	Proposed Revenue	Base Rate % Change	
				\$125,583	\$170,135	35.48%	
	Customer Charge per month	Monthly Minimum Bill per month		Facilities Charge per month		Energy Charge per kWh	
		Customer Charge+Facilities				Summer	Winter
Current Deferred Load Rate	\$3.00		Flat charge per month	\$4.00		All kWhs Penalty kWhs	\$0.01852 \$0.15939 \$0.02156 \$0.16927
Proposed Rate	\$8.50		Flat charge per month	\$11.00		All kWhs Penalty kWhs	\$0.02646 \$0.26749 \$0.02411 \$0.17205
Marginal Costs	\$8.91		Urban Rural	\$12.10 \$48.07			\$0.03872 \$0.26749 \$0.03245 \$0.17205

Q. WHAT ARE THE BILL IMPACTS OF PROPOSED 14.06 DEFERRED LOAD RIDER?

A. As the figure below shows, 95 percent of the customers on this rider, will see bill increases of less than \$14.00 per month. Five percent of the customers will see savings.

1

**Figure 13**



2

3

4 Q. PLEASE DESCRIBE YOUR RATE DESIGN PROPOSAL FOR THE 14.07 FIXED  
5 TIME OF SERVICE RIDER

6 A. The proposed Fixed Time of Service (f/k/a Fixed Time of Delivery) rider introduces  
7 increases to customer charges for secondary service and primary service to move them  
8 more in line with marginal costs. There is a corresponding increase to facilities charges  
9 for all voltages to bring both customer and facilities charges closer to marginal costs. As  
10 shown in the table below, the seasonal energy charges are approximately 60 percent of  
11 the marginal costs expected in the hours when customers will receive service under the  
12 rider.

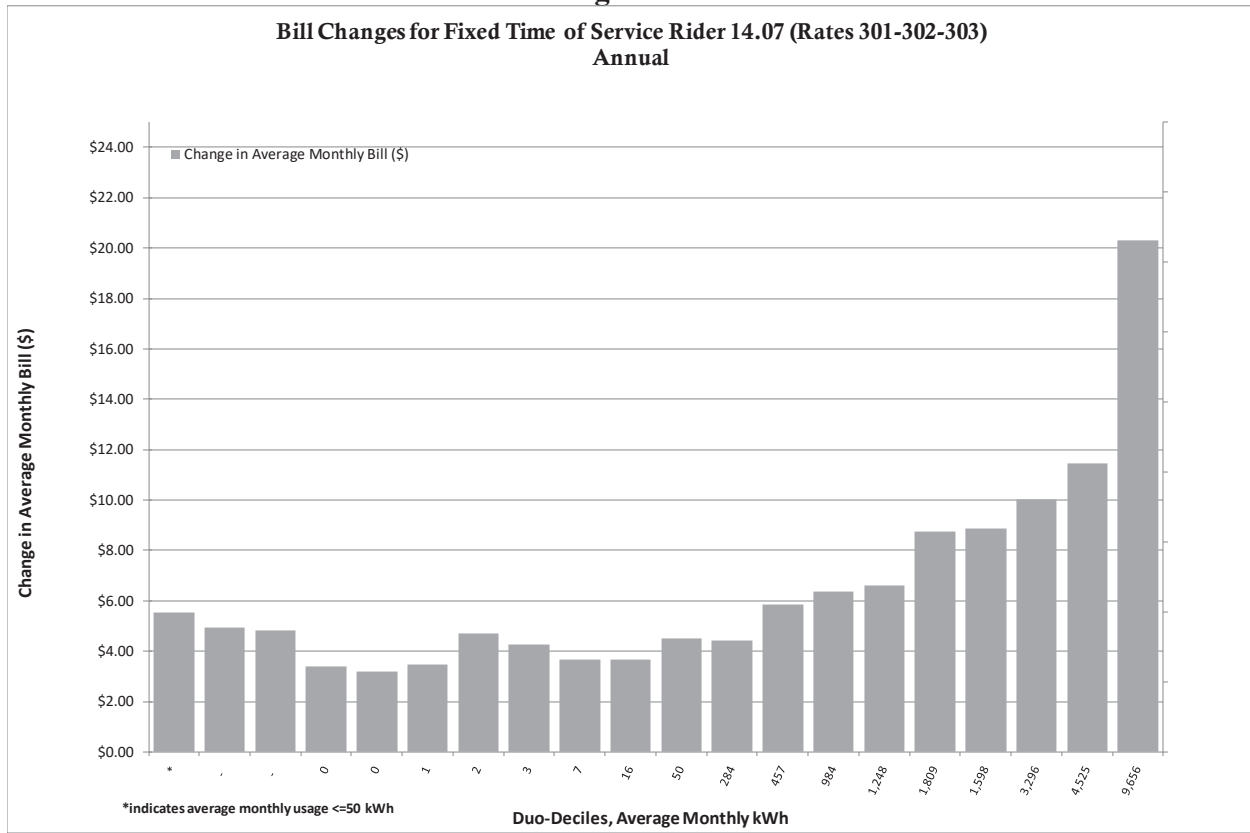
**Table 24**  
Current and Recommended 14.07 Fixed Time of Service Rider  
Rate and Marginal Costs

Fixed Time of Service	Section 14.07		Forecasted Revenue	Proposed Revenue	Base Rate % Change	
			\$23,290	\$46,882	101.3%	
	Customer Charge per month	Monthly Minimum Bill per month	Facilities Charge per Customer per month		Energy Charge per kWh	
<b>Current Rate</b>		Customer + Facilities Charge			Summer	Winter
Secondary Self-Contained Metering (301)	\$1.50		\$3.00	Penalty kWh	\$0.00110	\$0.00564
					\$0.04652	\$0.03826
Secondary CT Metering (302)	\$2.00		\$16.00	Penalty kWh	\$0.00110	\$0.00564
					\$0.04652	\$0.03826
Primary (303)	\$5.00		\$8.00	Penalty kWh	\$0.00100	\$0.00552
					\$0.04641	\$0.03813
<b>Proposed Rate</b>		Customer + Facilities Charge			Summer	Winter
Secondary Self-Contained Metering (301)	\$6.70		\$6.00	Penalty kWh	\$0.01093	\$0.01145
					\$0.06081	\$0.04761
Secondary CT Metering (302)	\$6.70		\$32.00	Penalty kWh	\$0.01093	\$0.01145
					\$0.06081	\$0.04761
Primary (303)	\$6.70		\$16.00	Penalty kWh	\$0.01089	\$0.01140
					\$0.06081	\$0.04761
<b>Marginal Costs</b>			\$ per a month			
Secondary Self-Contained Metering (301)	\$6.76		\$10.05	Penalty kWh	\$0.01640	\$0.01718
					\$0.06081	\$0.04761
Secondary CT Metering (302)	\$6.76		\$77.21	Penalty kWh	\$0.01640	\$0.01718
					\$0.06081	\$0.04761
Primary (303)	\$6.76		\$57.97	Penalty kWh	\$0.01634	\$0.01711
					\$0.06081	\$0.04761

Q. WHAT ARE THE BILL IMPACTS OF THE PROPOSED 14.07 FIXED TIME OF SERVICE RIDER?

A. The figure below shows varied bill impacts for all customers on the proposed Fixed Time of Service Rider, most of the customers will see a bill increase around or less than \$10.

**Figure 14**



**K. Mandatory and Voluntary Riders**

Q. ARE THERE ANY OTHER CHANGES TO OTP'S MANDATORY AND VOLUNTARY RIDERS?

A. Yes. Mr. Tommerdahl discusses certain proposed changes to OTP's Mandatory Riders contained in Section VI of his testimony.

**VI. NEW RATE PROPOSALS**

Q. IS OTP MAKING ANY NEW RATE PROPOSALS IN THIS CASE?

A. Yes. We are requesting the addition of two rate schedules to allow us to better meet customers' needs. We are also proposing a new rider to facilitate economic development activities, modifying our Lighting service and expanding our Air Conditioning rider to business customers. These proposals are discussed in more detail below.

**A. Residential Time of Day**

Q. PLEASE PROVIDE A SUMMARY OF THE RESIDENTIAL TIME OF DAY-PILOT.

A. The Residential Time-of-Day Pilot (Pilot) proposal is aligned with our rate structure objectives to offer rates with seasonal and time of day differences. It is being offered to certain Residential customers, limited to 50 single-metered customers served on the Residential Service (Section 9.01). The Pilot utilizes three time-of-day periods (on-peak, shoulder, and off-peak) for each season (summer and winter). These time of day periods are designed based on forecasts of the MISO energy market and reflect the marginal cost of service. The Pilot will be under proposed Rate Schedule 9.04, a copy of which is included in Volume 3.

Q. WHAT ARE THE OBJECTIVES OF THE RESIDENTIAL TIME OF DAY-PILOT?

A. OTP has identified three objectives:

1. Learn from and respond to customers;
2. Assess system costs and revenues; and
3. Inform future Automated Metering Infrastructure (AMI) investments.

Q. PLEASE FURTHER EXPLAIN THE PILOT OBJECTIVES.

A. The over-arching theme of the Pilot is to learn from our customers and the impacts they can make in relation to system costs and infrastructure investments.

1. **Learn from and Respond to Customers:** The Pilot introduces more granular pricing that can help customers to better affect their bills through behavioral changes. Some of those behavioral changes could come in the form of automation (*e.g.* programable timers and wi-fi enabled thermostats for electric vehicles/conditioned spaces), while others may relate to shifting usage to certain times of the date in response to the prices charged. Once customers become acclimated and comfortable with the Pilot, we expect to learn from customers what strategies they used to change their usage behavior. We also expect some customers may not acclimate to the designed time periods – which is also useful information. Finally, we intend to assess the extent customers are able to realize



1 bill savings without changing behavior in order to further refine future rate  
2 designs.

3 2. **Assess System Costs and Revenues:** If customers react to the Pilot price signals  
4 by shifting usage during high-price periods to lower priced-periods, OTP may  
5 experience a lower cost of service. Time-shifting can also impact revenue  
6 collections. Understanding these tradeoffs is important before expanding a time-  
7 of-day rate structure to the entire Residential class.

8 3. **Inform Future AMI Investment:** Facilitating additional rate options is a key  
9 functionality of AMI. Lessons learned from the Pilot will help us better  
10 understand the true value of that functionality. We also anticipate the Pilot will  
11 help OTP assess what equipment and features are useful and provide lessons that  
12 can be applied to a potential future AMI roll-out.

13  
14 Q. HOW WAS THE PILOT DESIGNED?

15 A. The Pilot is built from the 2018 Marginal Cost Study time-of-day periods and associated  
16 marginal costs. We compiled representative billing determinants for each pricing period  
17 (*e.g.* summer on-peak/shoulder/off-peak; winter on-peak/shoulder/off-peak) from OTP's  
18 2016 hourly Residential load research data for customers that would be eligible for the  
19 Pilot. Then, we used the 2018 Marginal Cost Study time-of-day periods and associated  
20 marginal costs and the billing determinants to establish revenue neutral rates.

21  
22 Q. WHAT DO YOU MEAN BY THE TERM "REVENUE NEUTRAL"?

23 A. When more than one rate is designed for a specific rate class, and the same customers can  
24 choose between one or more rates in the rate class, rates are designed to recover the same  
25 amount of revenue for that specific rate class no matter which rate the customer chooses.  
26 It is important to design rates to be revenue neutral to maintain revenue adequacy and  
27 stability.

1 Q. DOES A REVENUE NEUTRAL DESIGN MEAN CUSTOMERS WILL NOT SAVE  
2 MONEY IN THE PILOT?

3 A. No. The Pilot is designed based on historical usage data, meaning it reflects customers'  
4 behavior without the Pilot price signals being in place. Customers that can change their  
5 behaviors in response to the Pilot price signals may save money. Some customers  
6 participating in the Pilot may also save money without changing behavior simply because  
7 their existing usage is aligned with the pricing periods.  
8

9 Q. ARE THESE OUTCOMES EQUALLY DESIRABLE?

10 A. No. Customers that change their usage in response to the Pilot pricing help lower costs,  
11 which will ultimately benefit all customers and OTP. Capturing these kind of behavioral  
12 and cost changes is one of the main goals of time-of-day pricing. One of the goals of the  
13 Pilot is to better understand customers' usage (including their ability to change usage in  
14 response to more granular price signals) so that the rate design can be further refined to  
15 make sure that customer savings are aligned with reductions in the cost of providing  
16 service.  
17

18 Q. WHAT CUSTOMERS ARE ELIGIBLE FOR THE PILOT?

19 A. There are currently about 9,000 Residential customers that are eligible for the Pilot. Pilot  
20 eligibility is limited to single-metered customers taking Residential Service (Section  
21 9.01). This means that customers taking Residential – Controlled Demand (Section 9.02)  
22 service or utilizing our Water Heating – Controlled Service Rider (Section 14.01), other  
23 Controlled Service Riders (Sections 14.04-14.05), Controlled Service – Deferred Load  
24 Rider (Section 14.06) and Fixed Time of Service Rider (Section 14.07) are not eligible  
25 for the Pilot. We have not included these customers in the Pilot to simplify and focus on  
26 usage delivered under a single meter. This allows customers to face a single price signal  
27 and funnels all electricity usage through a single point of measurement. I do note that  
28 most of OTP's Voluntary Riders are interruptible services.  
29

1 Q. HOW WILL CUSTOMERS ENTER INTO THE PILOT?

2 A. Customers will opt-in to the Pilot on a voluntary basis. OTP will, however, encourage  
3 eligible customers that already participate in OTP's load research program to enter the  
4 Pilot. As participants in OTP's load research program, these customers already have  
5 metering that is compatible with the Pilot. Data from these customers is also especially  
6 valuable because OTP already has historical time-based usage data from these customers  
7 that can serve as a baseline for measuring the impact of the Pilot. We also anticipate  
8 participation by customers outside of the load research group in order to achieve the  
9 desired sample size. To reach the desired sample size, we will utilize simple random  
10 sampling of the target population, described in the Pilot eligibility above. For those that  
11 agree to participate, based on availability, we will proceed to engage the customer with  
12 the Pilot welcome packet containing important information about the pilot and schedule a  
13 start date.

14  
15 Q. WHY LIMIT THE PILOT TO ONLY 50 CUSTOMERS?

16 A. This level of customers will allow for both cost effectiveness and statistically meaningful  
17 results.

18  
19 Q. WHAT IS YOUR STATISTICAL BASIS FOR 50 CUSTOMERS BEING A  
20 MEANINGFUL SAMPLE?

21 A. We are relying on the central limit theorem which essentially states the more sample  
22 points you collect, the more the sampling distribution of the sampling mean approaches a  
23 normal distribution (i.e., a bell curve). The theorem holds true for sample sizes over 30.  
24 We are including additional sample points for attrition purposes.

25  
26 Q. WHAT IS THE PROPOSED LENGTH OF THE RESIDENTIAL TIME OF DAY  
27 PILOT?

28 A. If approved, OTP plans for the Pilot to remain open for two years, effective  
29 August 1, 2019. The additional time between the final Order and implementation is  
30 necessary to develop Pilot marketing materials, install metering, and establish other

1 program monitoring. We also believe up to 4 months is an appropriate amount of time to  
2 sign customers up for the Pilot.

3  
4 Q. WILL CUSTOMERS REMAIN IN THE PILOT FOR THE ENTIRE TWO YEARS?

5 A. It is OTP's expectation that most of the Pilot participants remain engaged in the Pilot for  
6 the full two years. One of the Residential Time of Day Pilot rules states:

7 Preference for participation will be given to customers who agree to a  
8 minimum of 12 months participation. Customers may elect service under  
9 this schedule for a trial period of three months. If a customer chooses to  
10 return to other available rate schedules after the trial period, the customer  
11 will pay a charge of \$20.00 for removal of time of day metering  
12 equipment.  
13

14 Q. WILL OTP ENDEAVOR TO KEEP THE PILOT FULLY SUBSCRIBED?

15 A. Yes. We are aiming to have the Pilot fully subscribed pilot at the initial start date of  
16 August 1, 2019. If there is customer attrition, we will continue outreach to encourage  
17 participation.  
18

19 Q. WILL OTP WORK WITH CUSTOMERS DURING THE PILOT?

20 A. Yes. We are seeking engaged customers that are willing to work smart on managing their  
21 energy usage and OTP will be available to assist customers along the way. Specifically,  
22 one of the Pilot rules is that:

23 The Company will endeavor to work with participants to assist with  
24 various measures to improve energy efficiency and other cost saving  
25 measures.  
26

27 Q. IS OTP PROPOSING A SIMILAR PILOT IN OTHER JURISDICTIONS?

28 A. Yes. OTP is proposing a similar pilot as part of its pending North Dakota Rate Case (ND  
29 PSC Case No. PU-17-398).  
30

**B. Super LGS**

Q. PLEASE PROVIDE A SUMMARY OF THE SUPER LARGE GENERAL SERVICE PROPOSAL.

A. The Super Large General Service (SLGS) proposal is primarily designed to attract high load factor large/commercial customers into OTP's service territory. Customers that meet the criteria will have access to individual contract pricing based on OTP's marginal cost of service. The proposal incorporates a regulatory pre-approval process and ratepayer protections that will ensure net benefits to all customers. OTP believes its proposal will provide prospective customers improved speed and price certainty, making it easier for businesses to invest in South Dakota. Additional details regarding the SLGS proposal are available in Proposed Rate Schedule 10.06, a copy of which is included in Volume 3.

Q. WHY INTRODUCE A NEW RATE WHEN OTP ALREADY HAS A LARGE GENERAL SERVICE RATE?

A. The customers OTP is targeting have much larger volume characteristics and higher load factors than the existing classes and rates, which leads to a relatively lower per-kWh average cost of service versus those on the existing rates. By making this proposal, OTP is positioning itself to offer competitive rates that will attract these types of customers to its service territory.

Q. WHAT IS THE ELIGIBILITY CRITERIA FOR THE SLGS RATE?

A. The SLGS rate will be available to new load (*i.e.* new customers or new facility opened by an existing customer) that has the following characteristics: (1) expected metered demand of at least 25 MW at a single metering point; (2) a load factor of at least 80 percent; and (3) annual energy sales of at least 175,000 MWh's over 12 consecutive billing months.

Q. PLEASE DISCUSS WHAT YOU MEAN BY "INDIVIDUAL CONTRACT PRICING BASED ON OTP'S MARGINAL COST TO SERVE."

A. Unlike standard rate schedules where customers within the same rate class essentially pay the same rates for customer, facility, energy and demand charges, customers served under

1 the SLGS rate would have customized rates based on their specific load characteristics  
2 and investment needed to serve them. SLGS customers also would pay marginal costs  
3 versus embedded costs.<sup>6</sup>  
4

5 Q. DESCRIBE A NEW CUSTOMER SITUATION AND THE ASSOCIATED  
6 MARGINAL COSTS OTP WOULD INCUR.

7 A. A new customer taking service under the SLGS rate will require OTP to incur marginal  
8 energy and capacity costs and may also require upstream distribution system  
9 reinforcement (if the SLGS is a distribution customer), new local dedicated facilities,  
10 marginal transmission costs (FERC-approved transmission rate), as well as marginal  
11 customer costs (meter, service drop, and associated customer services). OTP would  
12 develop marginal costs associated with the customer addition from OTP's most recent  
13 Marginal Cost Study.  
14

15 Q. IS THIS MARGINAL COST-BASED PRICING APPROACH SUPPORTED BY  
16 ECONOMIC THEORY?

17 A. Yes. The SLGS rate will be such that customers are paying at least their marginal cost of  
18 service. This means other customers are not harmed by the SLGS pricing. Further, to the  
19 extent that the marginal costs associated with the addition of a SLGS customer includes  
20 certain fixed costs, adding these customers to the system makes a valuable contribution to  
21 the cost of service.  
22

23 Q. DOES OTP HAVE ANY OTHER SERVICE OFFERINGS THAT UTILIZE  
24 MARGINAL COST-BASED RATES?

25 A. Yes. OTP offers a few rates that are priced on a marginal (prospective) basis. In the Large  
26 General Service Class, there are two riders (the LGS Rider and the Real-Time Pricing  
27 (RTP) Rider) that utilize estimates of day-ahead pricing in the MISO market. Another  
28 group of rates of this type are known as the Small Power Production rates. For those  
29 rates, OTP estimates its avoided costs and uses those estimates to pay customers with

---

<sup>6</sup> As discussed above, marginal costs are costs on a prospective basis (expected or forecasted) versus embedded costs which are retrospective (historical).

distributed generation systems avoided cost rates for energy and/or capacity when delivered to the OTP system.

Q. PLEASE DISCUSS THE REGULATORY PRE-APPROVAL PROCESS IN THIS PROPOSAL.

A. The foundation of the regulatory pre-approval process is to utilize a marginal cost-to-serve model and provide the model to the Commission Staff for verification of rate offerings. The model houses OTP's expected marginal unit cost to serve and the customer's expected load requirements. The marginal unit costs applied to the expected customer load requirements will determine the minimum incremental revenue expected to be collected under this rate. Since the individualized rate development can be verified by Commission Staff, OTP can provide a price quote to the potential customer with increased speed and certainty. This process offers OTP the ability to react to business opportunities and to potentially serve customers in our South Dakota service territory.

Q. PLEASE DESCRIBE YOUR PROPOSED SLGS RATE

A. The proposed SLGS rate is shown in proposed Rate Schedule 10.06, included in Volume 3. The rate schedule follows a similar design and headings as our other approved schedules, with a few exceptions, as noted.

- Standard Rate Design Headings/Sections:

- Description of Service Levels and Rate Codes for Revenue/Sales Tracking
- Regulations, Application of Rider, and Mandatory and Voluntary Riders

- Non-Standard or Expanded Rate Design Headings/Sections:

- Scope of Rate Schedule: This non-standard addition is used to communicate the purpose of the SLGS rate. Most importantly, it states the rate schedule provides net benefits to all ratepayers and the use/intention of marginal costs.
- Commission-Approved Process: As noted above, OTP is seeking a pre-approved process for improved speed and price certainty to assist businesses in becoming a part of South Dakota and its communities.

1 Therefore, it is vital for the public to understand that OTP must seek  
2 approval of rate quotes and final rates.

- 3 ○ Rate Determination: This item communicates to prospective customers  
4 that marginal costs are utilized to develop the individualized rates, with  
5 revenue expectations to support the scope of the rate schedule: namely  
6 provide net benefits to ratepayers, at or above OTP's marginal costs.
- 7 ○ Terms and Conditions: This section is typical, but the content is very  
8 important for prospective SLGS rate eligibility and company compliance.

9  
10 Q. WHAT IS THE RELEVANT TIMEFRAME FOR THE MARGINAL COST  
11 ANALYSIS?

12 A. The relevant time-frame for the marginal cost analysis depends on the term of the SLGS  
13 rate, *i.e.*, the period before any changes to price are made. The risk of SLGS rates falling  
14 significantly below actual marginal generation costs may be relatively low if SLGS rates  
15 are updated every three to five years.

16  
17 Q. IS OTP PROPOSING TO ADD A SLGS RATE IN ANY OF ITS OTHER  
18 JURISDICTIONS?

19 A. Yes. OTP is proposing a similar rate as part of its pending North Dakota Rate Case (ND  
20 PSC Case No. PU-17-398).

21 **C. Economic Development Rider**

22 Q. PLEASE PROVIDE A SUMMARY OF THE PROPOSED ECONOMIC  
23 DEVELOPMENT RIDER.

24 A. As discussed by Mr. Tommerdahl, the Economic Development Rider (EDR) mechanism  
25 calculates a proposed rate discount off OTP's Large General Service Rider rate. The  
26 discount would be equal to the difference between the Large General Service Rider rate  
27 and the annual incremental (marginal) costs to serve that particular customer and would  
28 be available for up to five years.



1 Q. WHAT CUSTOMERS WOULD BE ELIGIBLE TO TAKE SERVICE UNDER THE  
2 EDR?

3 A. The EDR would be available to existing customers with metered demands of at least  
4 1,000 kW that increase measured demand at their current location by at least 500 kW or  
5 to greenfield locations of new or existing customers with expected metered demand of at  
6 least 500 kW at a single metering point.  
7

8 Q. DOES THE EDR MECHANISM PROVIDE FOR THE GRADUAL MOVEMENT OF  
9 CUSTOMERS TO THE FULL LARGE GENERAL SERVICE RIDER RATE?

10 A. Yes. The EDR discount is available for up to five years. If the EDR discount is in place  
11 for a five-year contract term, the discount would decrease over the five-year period, with  
12 the customer returning to the full Large General Service Rider rate in year six. There  
13 would be a similar gradual movement to the full Large General Service Rate for terms  
14 shorter than five years.  
15

16 Q. HOW WILL OTP CALCULATE THE EDR RATE DISCOUNT?

17 A. The first step will be to calculate the marginal cost of providing service to the customer,  
18 including energy, capacity and customer-related marginal costs, and a return on  
19 investment. OTP would then compare that marginal cost to the cost of providing service  
20 under the Large General Service Rider: if the marginal cost is lower, then OTP would  
21 propose a discount. In no event would the customer pay less than the marginal cost of  
22 providing service.  
23

24 Q. PLEASE DESCRIBE THE COMMISSION'S ROLE IN THE EDR RATE PROPOSAL.

25 A. OTP is providing Staff a copy of the model it will use to calculate potential EDR rate  
26 discounts. We ask that Commission Staff review and approve the model. Once approved,  
27 OTP would use the model to prepare EDR rate proposals for qualifying customers based  
28 on the customer's specific information.

1 Q. WOULD COMMISSION STAFF BE ABLE TO VERIFY ANY EDR RATE  
2 DISCOUNTS BEFORE OTP MAKES AN OFFER TO CUSTOMERS?

3 A. Yes. OTP would use the Commission-approved EDR rate model to calculate potential  
4 discounts. OTP would provide any potential discounts to Commission Staff for  
5 verification before sending a proposal to customers. By working from a pre-approved  
6 model, we anticipate the verification process can be performed quickly and allow OTP to  
7 react quickly to secure the new load.  
8

9 Q. PLEASE COMPARE THE SLGS RATE PROPOSAL TO OTP'S PROPOSED  
10 ECONOMIC DEVELOPMENT RIDER.

11 A. Both rate proposals<sup>7</sup> fulfill a similar goal: attract business customers into OTP's service  
12 territory and provide net benefits to its ratepayers. Both the EDR and SLGS rate utilize  
13 the marginal cost-to-serve model, customer load data, and OTP's standard rates and  
14 riders. The differences are by design: the EDR is designed to offer customer-specific,  
15 marginal cost-based discounts on OTP's existing rates for a period of up to 5 years,  
16 whereas the SLGS offers individualized rates designed upon marginal costs to serve and  
17 can be applied indefinitely, although the customer has the ability to return to existing  
18 standard rates or to a real time pricing rate after a period of 5 years.  
19

20 Q. IS OTP PROPOSING TO ADD AN EDR IN ANY OF ITS OTHER JURISDICTIONS?

21 A. Yes. OTP filed a North Dakota Economic Development Rider (EDR) in late May 2017  
22 (approval pending).<sup>8</sup>

23 **D. LED Street and Area Lighting – Dusk to Dawn**

24 Q. PLEASE PROVIDE A SUMMARY OF THE PROPOSED LED STREET AND AREA  
25 LIGHTING – DUSK TO DAWN SERVICE (LED LIGHTING SERVICE).

26 A. The proposed Light-Emitting Diode (LED) Lighting Service (Section 11.07) is a new  
27 lighting products schedule comprising of LED Outdoor and Flood lighting, Aluminum  
28 alloy poles, and a LED Floor Visor. Customers taking LED Lighting Service will receive

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<sup>7</sup> OTP engaged the services of NH Regulatory Consulting LLC for both EDR & SLGS proposals.

<sup>8</sup> ND PSC Case No. PU-17-238.

1 the same service as provided under the current Lighting offerings (illumination service,  
2 including equipment installation, asset rental, electricity, and maintenance in a  
3 convenient, monthly charge on the customer's electric service bill). The LED Lighting  
4 Service, however, provides LED technology advantages over conventional High-Intensity  
5 Discharge (HID) lighting systems.

6  
7 Q. PLEASE DESCRIBE THE ADVANTAGES LED LIGHTING HAS OVER HID  
8 LIGHTING.

9 A. The advantages are as follows:

- 10 1. **Equipment life.** LED fixture life in street and area lighting applications is often rated  
11 at 100,000 hours, where equivalent HID products operate with rated lives of only  
12 10,000 to 24,000 hours.
- 13 2. **Lumen depreciation.** Lumen depreciation for most HID products can reach 50  
14 percent, where most LED fixtures often operate at 70 percent of rated lumen output at  
15 end of rated life.
- 16 3. **Energy efficiency.** E Source reports that the average efficacy of 100-, 250- and 400-  
17 watt HID street and area lighting fixtures is about 61 lumens per watt. Equivalent  
18 LED fixtures operate at an average efficacy of 94 lumens per watt, or about 55  
19 percent more efficiently, than HID.
- 20 4. **Light quality.** Today's LED fixtures operate at a much higher color rendering index  
21 (CRI) than most HID products, enabling drivers and pedestrians to more safely  
22 observe night time conditions due to improved light quality.

23  
24 Q. WHY IS OTP MAKING THIS PROPOSAL?

25 A. OTP believes the time is right where prices for the technology are now reasonable, and  
26 the technology is a proven long-lasting efficient lighting solution. In addition, numerous  
27 South Dakota communities served by OTP are requesting LED lighting.

1 Q. WILL YOUR NEW LED FIXTURES BE COMPATIBLE WITH YOUR CURRENT  
2 OFFERINGS?

3 A. Yes. We have worked closely with our lighting supplier to provide compatibility with our  
4 existing offerings. OTP also took the opportunity to go further regarding our selections.  
5 We are aware some communities would like to meet Dark Sky Compliance rules.  
6 Because of their interest, we are adding a visor option for the proposed flood lights to  
7 limit light trespass and potential up-light. The products are known as “nighttime friendly”  
8 and consistent with LEED<sup>9</sup>® goals and Green Globes<sup>10</sup>™ criteria for light pollution  
9 reduction.

10  
11 Q. DID OTP SELECT NEW AND AVAILABLE LED TECHNOLOGIES WITH  
12 EQUIVALENT LIGHTING CHARACTERISTICS TO THE CURRENT STREET AND  
13 AREA LIGHTING OPTIONS?

14 A. Yes. OTP’s Materials Engineering Department worked with our lighting supplier to  
15 develop a set of LED fixture offerings that handle the current lighting offering to a  
16 greatly reduced set of new LED technologies. The table below lists the current HID  
17 lighting type and the equivalent new replacement LED lighting types.

18  

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<sup>9</sup> Leadership in Energy and Environmental Design (LEED).

<sup>10</sup> The Green Globes system delivers an online assessment protocol, rating system and guidance for green building design, operation and management. It is interactive, flexible, and affordable, and provides market recognition of a building’s environmental attributes through third-party verification.

**Table 25**  
Comparisons of HID and LED Lighting Types

Street and Area Lighting		Area Flood Lighting	
HID (OLD) Light Type	LED Equivalent Light Type	HID (OLD) Light Type	LED Equivalent Light Type
HPS9PT	LED3PT	400 HPS	LED20FLOOD
MV6PT	LED3PT	400 MA	LED20FLOOD
HPS14	LED5	400 MV	LED20FLOOD
HPS9	LED5	SIGN	LED20FLOOD
MH8	LED5	1000-MA	LED30FLOOD
MV6	LED5	1000-MV	LED30FLOOD
HPS14PT	LED5PT	1M-HPSF	LED30FLOOD
MH8PT	LED5PT		
HPS19	LED8		
MH14	LED8		
HPS23	LED10		
MH20	LED10		
MV11	LED10		
MV21	LED10		
HPS44	LED13		
MH110	LED13		
MH36	LED13		
MV35	LED13		

Q. HOW DID OTP DESIGN THE LED LIGHTING SERVICE RATE?

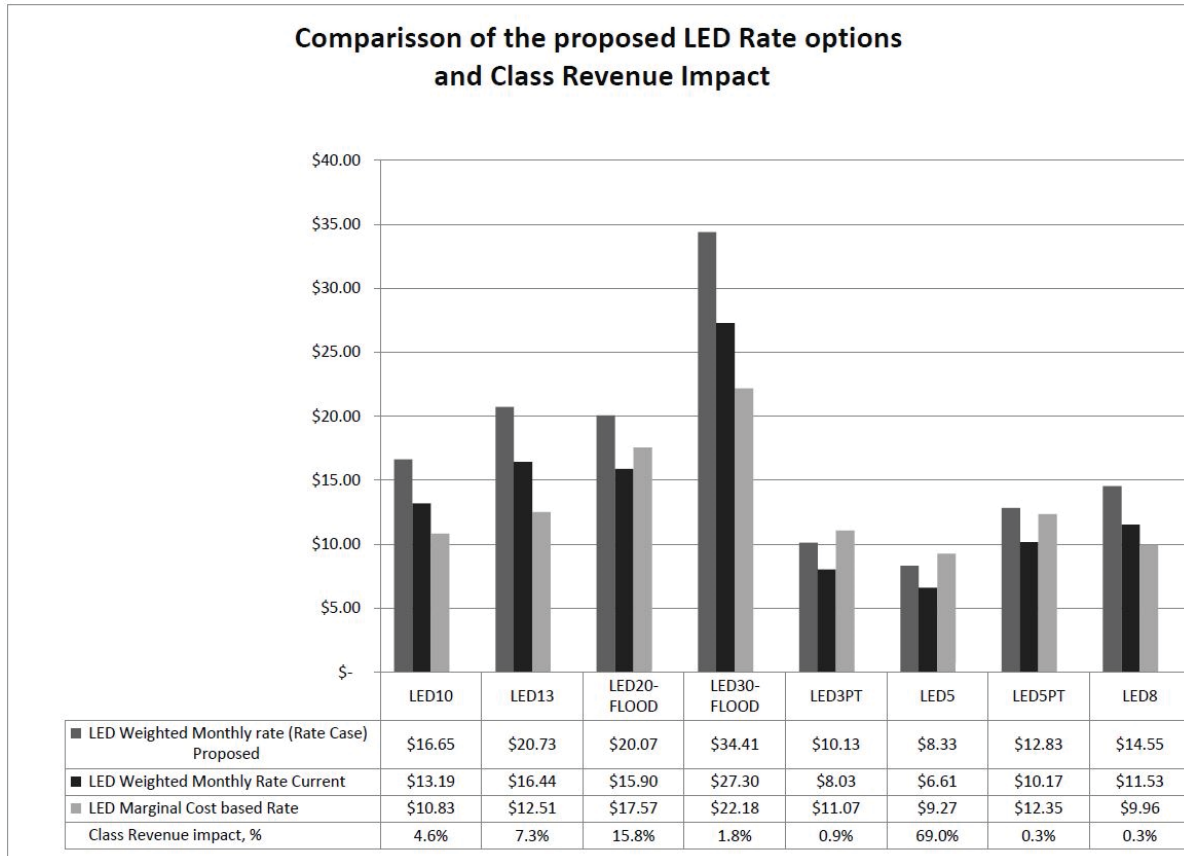
A. OTP assessed the marginal cost of service for the proposed LED fixtures and pole offerings. The results of this study are included in Exhibit\_\_\_(DGP-1), Schedule 8. This study calculated the proposed LED Lighting Service rates based on the capital and O&M costs of the new LED fixtures.

OTP then compared those marginal cost-based revenues to the embedded cost proposed revenues for the Lighting class. The goal is to design revenues so total Lighting class revenues are equal to those proposed by Mr. Haugen. To reach that goal, we allocated the intra-class Lighting revenues to the different Lighting rate classes using a Weighted Average Method of Allocating revenue requirements for the current fixtures in the corresponding LED fixture types. Additional detail on this process is included in Schedule 8. This method was used over the EPMC method to limit the impact to customers, thereby making the transition to the LED lighting technology to be as smooth as possible.

Q. PLEASE DESCRIBE THE PROPOSED CUSTOMER BILL IMPACTS.

A. The figure below is an illustration of the relationship between the marginal cost-based rates for LED fixtures and the proposed LED Lighting Service rate.

**Figure 15**



The proposed LED5 type, which comprises the former lighting types, has the greatest proportion of revenue, at 69 percent. In this transition, OTP proposes a balance of currently offered rates versus the marginal costs. Furthermore, not all marginal cost-based prices are higher than the proposed prices, e.g. LED30-Flood, but overall, we believe have a balanced proposal to offer to our customers.

Q. PLEASE EXPLAIN OTP'S PLAN TO TRANSITION TO LED SERVICES.

A. OTP is proposing to close the Outdoor Lighting (Section 11.04) to new customers and replacements. Current customers will be served on the closed rate until their existing light

1 fails. The new proposed LED Lighting Service (Section 11.07) will provide services to  
2 new customers and replacements.

3  
4 Q. IS OTP PROPOSING A SIMILAR RATE IN OTHER JURISDICTIONS?

5 A. Yes. OTP is proposing a similar rate as part of its pending North Dakota Rate Case (ND  
6 PSC Case No. PU-17-398).

7 **E. Air Conditioning Rider**

8 Q. PLEASE PROVIDE A SUMMARY OF THE PROPOSED ADDITION TO THE AIR  
9 CONDITIONING CONTROL RIDER.

10 A. OTP is proposing to add a new option to the existing Air Conditioning Control Rider for  
11 Commercial customers (only those customers taking service on Sections 10.01 and  
12 10.02). This addition to the rider allows Commercial customers to reduce their summer  
13 peak demand obligation. By reducing peak demand obligations, OTP avoids unnecessary  
14 generation additions and helps to maintain lower energy costs for all customers.

15  
16 Q. IS THE COMMERCIAL CUSTOMER INCENTIVE DIFFERENT THAN THE  
17 RESIDENTIAL CUSTOMER INCENTIVE?

18 A. Yes. OTP is proposing compensation that recognizes the differences between Residential  
19 and Commercial sized cooling systems and the difference in corresponding demand side  
20 benefits. Commercial cooling loads are more complex than typical Residential cooling  
21 systems with variability in system sizes, use of multiple units within a system, and use of  
22 multi-stage compressors per unit within systems. To account for this variability among  
23 Commercial customers' systems, a bill credit per ton of cooling capacity is warranted for  
24 Commercial customers.

25  
26 Q. WHAT IS THE PROPOSED CREDIT FOR THE PROPOSED COMMERCIAL  
27 PROGRAM?

28 A. OTP proposes a credit of \$6.00 per ton of cooling capacity, per month, during the  
29 program billing months of June through September. This credit amount is consistent with

other utilities in the region, and consistent with pricing offered to OTP's Minnesota customers.<sup>11</sup> Further it is significant enough to attract participation in the program.

Q. IS THIS CUSTOMER CREDIT FOR AIR CONDITIONING CONTROL COST EFFECTIVE?

A. Yes. OTP utilized DSMore™ to analyze this program. DSMore™ is an accepted evaluation tool for energy efficiency programs and can also be used to analyze demand response programs, including the Air Conditioning Control Rider. Preliminary analysis, assuming 10 customers with 6 tons of cooling capacity each participate in the program, shows more benefits than costs (as indicated by a number greater than 1) across the five common benefit categories.

**Table 26**  
Commercial Air Conditioning Rider Benefit/Cost Analysis

Benefit Category				
Participant	Ratepayer	Utility	Total Resource	Societal
Infinite	1.49	1.54	1.56	2.35

Q. WILL CONTROL METHODS BE CONSISTENT WITH RESIDENTIAL CONTROL?

A. Yes. The total hours of interruptions per year will not differ from the existing Residential program. We are proposing to add language to the Terms and Conditions to describe how control will be achieved on both single and dual stage air conditioning.

## VII. MERRICOURT WIND PROJECT STEP INCREASE RATES

Q. HOW DOES OTP PROPOSE TO RECOVER THE REVENUES ASSOCIATED WITH ITS STEP INCREASE RATE PROPOSAL?

A. OTP is proposing to recover the revenues associated with the Merricourt Wind (Merricourt) project step increase rate proposal through the energy charge component of customers' rates.

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<sup>11</sup> OTP is proposing a similar rate as part of its pending North Dakota Rate Case (ND PSC Case No. PU-17-398).



1 Q. WHY IS OTP PROPOSING TO RECOVER THE STEP INCREASE REVENUES  
2 THROUGH THE ENERGY CHARGE COMPONENT OF CUSTOMERS' RATES?

3 A. OTP Witness Mr. Bradley E. Tollerson explains in his Direct Testimony that the  
4 Merricourt project will help keep energy prices for Otter Tail Power Company's  
5 customers as low as possible and reduce OTP's need to rely on energy markets. It is  
6 therefore reasonable for the step increase revenues associated with the Merricourt project  
7 to be collected through the energy charge.

8 Recovering the step increase revenues through the energy charge also provides  
9 administrative efficiency of not completely re-designing rates. As discussed by Mr.  
10 Tommerdahl, we anticipate that the 2017 Test Year rates would go into effect  
11 January 1, 2019, with the step increase rates taking effect one year later, on January 1,  
12 2020. It seems unnecessary to prepare two full rate designs to cover these periods,  
13 especially when OTP anticipates filing another rate case in 2021, including a refreshed  
14 rate design.

15  
16 Q. HOW DID OTP ALLOCATE THE STEP INCREASE RATE CLASS REVENUE  
17 RESPONSIBILITIES TO RATE CLASSES?

18 A. The step increase rate class revenue responsibilities developed by Mr. Haugen were  
19 allocated to individual rate classes based on 2017 Test Year sales. Exhibit\_\_\_(DGP-1),  
20 Schedule 9 shows the rate class step increase revenue responsibilities and associated  
21 increases to energy charges.

22  
23 Q. HAS OTP PREPARED TARIFF SHEETS FOR THE STEP INCREASE RATE  
24 PROPOSAL?

25 A. Yes. Tariff sheets associated with the step increase rate proposal are included in Section 3  
26 of Volume 3. These tariff sheets would go into effect January 1, 2020.

## 27 **VIII. OTHER TARRIF CHANGES**

28 Q. IS OTP PROPOSING TO CANCEL OR ELIMLINATE ANY TARRIF PROVISIONS?

29 A. Yes. OTP proposes cancelling the Released Energy Rider. The Released Energy Rider  
30 was put in place to protect OTP customers from extreme market prices that had

1 materialized in certain hours during the infancy of the MISO market. Since that time, the  
2 MISO market has matured and the kind of market failures that caused extreme prices  
3 have been corrected. Other than one test in 2001, OTP has never used the Released  
4 Energy Rider. We therefore believe the Released Energy Rider is no longer necessary.  
5

6 Q. IS OTP PROPOSING ANY CHANGES TO ITS GENERAL RULES AND  
7 REGULATIONS?

8 A. Yes. OTP is proposing improvements and updates to its rate book that clarify service  
9 conditions and other aspects of the rate book. All the changes are reflected in the Matrix  
10 of Tariff Changes included as Exhibit\_\_\_(DGP-1), Schedule 10.  
11

12 Q. ARE THERE ANY CHANGES YOU WOULD LIKE TO EXPLAIN?

13 A. Yes. In Section 1.05 of our General Rules and Regulations we have proposed a change to  
14 our Disconnection Notice. This change applies to customers seeking reconnection after a  
15 discontinuation of service. Under current practice, which is reflected by the  
16 Disconnection Notice, customers must pay the “Disconnection Amount” stated in the  
17 Notice in order to be reconnected. Under the change we have proposed, customers  
18 seeking reconnection would need to pay all amounts due and outstanding, which is  
19 designated as “Total Amount Due” in the Notice.  
20

21 Q. WHAT IS THE REAONS FOR THIS CHANGE?

22 A. This change will align our practices with our customers’ expectations. Customers who  
23 pay the “Disconnection Amount” often assume they are bringing their accounts current.  
24 They are not. Invariably this causes the customer to fall into arrears and receive another  
25 Disconnection Notice shortly after being reconnected. We believe it would be better and  
26 less expensive for our customers to avoid this cycle by requiring customers to bring their  
27 accounts current by paying the Total Amount Due. By doing so, customers are less likely  
28 to receive another Disconnection Notice shortly after being reconnected.

1 Q. ARE THERE ANY OTHER CHANGES TO WISH TO DESCRIBE?

2 A. Yes. We are also proposing changes to Section 2.01 Assisting Customers in Rate  
3 Selection. The changes we have proposed clarify how OTP will make its rates known to  
4 customers, when the company is supposed to advise customers on rate selection, and the  
5 nature and scope of that advice.  
6

7 Q. WHAT IS THE REASON FOR THE CHANGE?

8 A. The current language is ambiguous in some respects. For example, under the current  
9 language it is not clear when OTP “has notice” that a customer qualifies for more than  
10 one rate, triggering an obligation for OTP to advise the customer. This can lead to  
11 disagreements as to what OTP knew, or should have known, about changes to a  
12 customer’s energy needs. This can put OTP in a very difficult and unreasonable position.  
13 Under the proposed changes OTP will assist customers that expressly request assistance.  
14 The proposed changes also better define the nature and scope of the advice to be rendered  
15 by the Company. The current language can lead to unreasonable expectations on the part  
16 of some customers. We think the proposed changes strike a reasonable balance that is fair  
17 to all our customers.

18 **IX. CONCLUSION**

19 Q. WHAT ARE YOUR CONCLUSIONS?

20 A. The facts presented in my Direct Testimony support the conclusions that:

- 21 • OTP’s proposed rate design appropriately balances important considerations,  
22 including the cost of service and impact on customers;
- 23 • OTP’s proposed rate components, included proposed fixed charges, are  
24 reasonable; and
- 25 • OTP’s rate schedule changes should be adopted.  
26

27 Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

28 A. Yes.