

MAINE STATE LEGISLATURE

The following document is provided by the
LAW AND LEGISLATIVE DIGITAL LIBRARY
at the Maine State Law and Legislative Reference Library
<http://legislature.maine.gov/lawlib>



Reproduced from electronic originals
(may include minor formatting differences from printed original)

MAINE PUBLIC UTILITIES COMMISSION

**Report on Demand Charges Placed on
Medium Rate Class Customers**

**Presented to the
Joint Standing Committee on
Energy, Utilities and Technology
January 15, 2014**



STATE OF MAINE
PUBLIC UTILITIES COMMISSION

THOMAS L. WELCH
CHAIRMAN

DAVID P. LITTELL
MARK VANNOY
COMMISSIONERS

HARRY LANPHEAR
ADMINISTRATIVE DIRECTOR

January 14, 2014

Honorable John J. Cleveland, Senate Chair
Honorable Barry J. Hobbins, House Chair
Energy, Utilities and Technology Committee
100 State House Station
Augusta, Maine 04333

Re: Report Related to LD 302, Resolve, Directing the Public Utilities Commission to Review Certain Electricity Distribution Charges Assessed on Businesses

Dear Senator Cleveland and Representative Hobbins:

During its 2013 session, the Legislature enacted LD 302, Resolve, Directing the Public Utilities Commission to Review Certain Electricity Distribution Charges Assessed on Businesses. Resolves 2013, ch. 20. The Resolve directed the Commission to submit a report regarding the demand charges placed on the medium rate class by investor-owned T&D utilities. The Resolve directed the Commission to examine a number of specific issues in the report and submit it by January 15, 2014. Attached is the Commission's report for the Committee's consideration.

If you have any questions, please do not hesitate to contact us.

Sincerely,

A handwritten signature in cursive script that reads "Thomas L. Welch".

Thomas L. Welch, Chairman

On behalf of the Chairman and

David P. Littell, Commissioner
Mark A. Vannoy, Commissioner
Maine Public Utilities Commission

Attachment

cc: Energy, Utilities and Technology Committee Members
Jean Guzzetti, Legislative Analyst

I. INTRODUCTION

During its 2013 session, the Legislature enacted Resolve, Directing the Public Utilities Commission to Review Certain Electricity Distribution Charges Assessed on Businesses. Resolves 2013, ch. 20. The Resolve directs the Public Utilities Commission (Commission) to submit a report regarding the demand charges placed on the medium rate class by investor-owned transmission and distribution (T&D) utilities. Specifically, the Resolve directed that the Commission report include the following:

1. An examination of how a utility determines whether a business should be in the medium rate class and therefore subject to the demand charges;
2. An examination of the impact of demand charges on seasonal businesses that reach the demand charge break point only a few times per year or only during peak seasonal usage and whether a utility's current terms and conditions that govern demand charges are just and reasonable for seasonal businesses;
3. An examination of the impact of demand charges on new customers, including a business account whose electricity use may change as a result of a change in ownership, and whether a utility's current terms and conditions that govern demand charges are just and reasonable for new customers;
4. An examination of the impact of demand charges on business innovation and whether there are actions that can be taken to ensure that the demand charge does not negatively affect a business' willingness to test a new technology that increases electricity use; and
5. Any recommended changes to a utility's terms and conditions to make the demand charges more just and reasonable, especially for the types of customers described in numbers 2 to 4 above, and a description of the process that will be needed to implement the recommendations.

The Resolve directed the Commission to submit the report by January 15, 2014.

As a vehicle to obtain information and viewpoints on the issues specified in the Resolve, the Commission, on July 9, 2013, initiated an Inquiry into Demand Charges Placed on Medium Rate Class Consumers and Consumer Protection.¹ The Notice of Inquiry (NOI) contained a discussion of the issues presented in the Resolve and sought comment on those issues by interested persons.² The following entities submitted

¹ See *Maine Public Utilities Commission, Notice of Inquiry into Inquiry into Demand Charges Placed on Medium Rate Class Consumers and Consumer Protection*, Docket No. 2013-00366 (July 9, 2013).

² The Notice of Inquiry was distributed to Maine's transmission and distribution utilities, the Public Advocate and all persons that participated in the legislative process regarding the Resolve.

written comments and participated in a meeting held on October 7, 2013 on the issues raised by the Resolve: Central Maine Power Company (CMP), Bangor Hydro Electric Company (BHE), Maine Public Service Company (MPS),³ Eastern Maine Electric Cooperative (EMEC), and the Office of the Public Advocate (OPA).

Through this Inquiry process, the Commission examined existing utility practices related to demand charges for medium rate class consumers. Specifically, the Commission considered the methods utilities use to determine whether a customer should be in the medium class and the extent to which the current practices impact seasonal businesses, new businesses, and business innovation. As part of its Inquiry, the Commission requested that T&D utilities respond to a series of questions related to how customers are determined to be in the medium service class, including five years of customer account data relating to customers that have been moved into the medium rate class.

II. NATURE OF DEMAND CHARGES

To provide guidance on the impact of “demand” related charges on businesses, it is first necessary to define the term “demand” and explain how demand-related costs on utilities’ systems are recovered from their ratepayers. Demand charges are a common component of electric rate structures for Maine’s T&D utilities and utilities across the nation. Generally, there are three main components of utility rates: 1) energy charges which are assessed on the basis of kilowatt hours (kWh) used; 2) demand charges which are assessed based on the customer’s peak usage during a billing period, measured in kilowatts (kW); and 3) monthly customer charges that reflect costs of services such as metering and billing. “Energy” charges, as that term is used in this Report, refer to the portion of the customer’s T&D bill that is recovered on a per/kWh charge. All customers also pay for electric supply (i.e., energy) either through the standard offer or to a competitive electricity supplier.

T&D utilities are obligated to meet consumers’ demand and system-wide demand by building, operating and maintaining the infrastructure necessary to deliver electricity to all customers at all times, including when system conditions approach or reach what is known as system peak conditions (when overall demand on the system is at its highest). Because T&D system costs are largely fixed in the short term, and their costs do not vary in the short run based on usage, utilities must maintain the necessary infrastructure (e.g., transformers, conductors, service wires, etc.) to meet system peak conditions even if at most times of the year the system is not experiencing peak conditions.

For medium and large business customers, utilities commonly recover the costs of T&D system infrastructure through what are referred to as “demand” charges. Demand charges are not based on the total amount of electricity a consumer uses over

³ Bangor Hydro Electric Company and Maine Public Service Company have recently merged into a single utility with the corporate name Emera Maine.

a billing period. Instead, demand charges are based on the maximum amount of electricity used by customers during a given interval during the billing period, typically 15 minutes. For residential and small commercial customers, Maine's T&D utilities do not assess demand charges and, instead, recover T&D system costs through energy charges. As shown further below, the "breakpoint" between small businesses, which pay for demand-related costs through the energy charge, and medium businesses, which pay for these costs through demand charges, varies from 20 kW to 50 kW depending on the utility.⁴

A customer that is assessed a demand charge is not paying for additional or different costs than a customer that is not subject to a demand charge. Customers are simply paying for demand-related costs in different ways (i.e., one through a demand charge and the other through an energy charge). In fact, for many customers, paying on the basis of demand rather than energy results in a lower overall bill. The extent to which a customer's bill will be more or less if assessed on the basis of demand rather than energy is a function of the customer's "load factor," which is the customer's average usage compared to its peak usage. A customer with a low load factor (low average usage when compared to peak usage) is generally better off paying on the basis of an energy charge. On the other hand, a customer with a high load factor (high average usage versus peak usage) is generally better off paying on the basis of a demand charge.

The issues raised in the Resolve result from the bill impacts that may occur when a customer is transferred from the small class (that does not have demand charges) to the medium class (that does have demand charges). As noted above, depending on the customer's load factor, the impact could be higher or lower bills. Customers with high load factors (usage is relatively consistent throughout the day or the month) are generally better off receiving service under the medium class rate because, although they incur a demand charge, the charge for energy is less and may even be zero per kWh. Customers with a low load factor (low energy usage relative to peak), on the other hand, and whose demand only exceeds the threshold once or twice a year, may be better off receiving the small commercial rate.

III. RESOLVE ISSUES

The following sections of this Report contain a discussion of the issues specified in the Resolve.

⁴ As used in this Report, the terms demand "breakpoint" or "threshold" are used interchangeably and refer to the kW values (e.g., 20kW, 25kW, or 50kW) established in the utilities' rate schedules in determining when demand charges are assessed.

1. Determination of Customer Class for Businesses

Central Maine Power Company

CMP's demand breakpoint between Small General Service (SGS) and Medium General Service (MGS) is 20 kW.⁵ Under CMP's SGS rate schedule, the Company recovers costs through customer charges and energy charges. As noted above these energy charges recover the same types of costs recovered through demand charges. Under CMP's MGS rate schedule, the Company recovers its costs through a combination of customer charges and demand charges. Any commercial customer taking service under the SGS rate whose maximum monthly measured demand exceeds 20 kW twice in the preceding twelve months will be transferred to the applicable MGS rate.⁶

Based on the meter readings taken by the Company of a customer's demand, the Company employs a screening process to determine, among other things, whether the customer may have exceeded the 20 kW demand threshold due to certain extraordinary or anomalous events (e.g., equipment testing that resulted in exceptionally high demand or a week-long festival that may have spanned two billing periods). If CMP finds nothing in the screening process that would reveal that a customer's demand was based on some unusual occurrence, CMP moves customers to the MGS rate to take effect during the next billing period. CMP also sends a letter to the customer informing them about the rate change. The letter also directs the customer to the Company's website to learn more about demand charges and how they work.

On average, CMP transitions approximately 400 customers per year from the SGS rate schedule to the MGS rate schedule. Once customers have been migrated to the MGS class based on exceeding the demand threshold, they may become eligible to return to the SGS rate once their kW demand has fallen below the 20kW threshold for twelve consecutive months. Such customers are notified by the Company that they are eligible to receive the SGS rate and are invited to contact a CMP customer service representative to determine the customers best rate alternative given their demand and overall energy usage.

⁵ CMP's current demand breakpoint is being reviewed in a pending proceeding before the Commission that addresses a requested rate increase and changes to the Company's rate design (Docket No 2013-00168).

⁶ To determine a SGS customer's maximum monthly demand, CMP first installs a meter at the customer's premises capable of measuring and transmitting 15 minute integrated kW demand readings. CMP selects customers to be outfitted with separate demand meters based on periodic reports that reveal SGS customers whose hourly demands are likely to have approached or exceeded 20 kW. After having installed demand meters for these customers, CMP monitors these customers' demand and transitions those customers that exceed 20 kW in demand twice or more in a twelve month period.

Bangor Hydro Electric Company

BHE's demand breakpoint between small and medium business customers is 25 kW. The Company maintains and reviews annually an internal report and identifies customers who have exceeded the 25 kW demand breakpoint during a twelve-month period. Customers whose demand does not exceed 25 kW threshold more than two times in the prior twelve months remain eligible to receive the small customer service rate. Customers who have exceeded the demand threshold three or more times in the preceding twelve month period are notified that they are no longer eligible to receive the small customer class service rate and that they will be transitioned to another applicable rate during the next billing cycle.⁷ Under BHE's current practice, after a customer has been transitioned from the small customer rate to the medium rate class that includes a separate demand charge, a customer may become eligible to return to the small customer service rate when its demand has fallen below 25 kW for twelve consecutive months. If this occurs, the Company notifies the customer of their eligibility to receive the small customer service rate. Customers wishing to transition to the small customer service rate can contact a customer service representative and discuss whether transitioning to the small customer service rate would be advantageous given their overall usage, historical demand and other factors.

Based on BHE's data, approximately 329 customers were moved onto a demand charge based rate from a non-demand based rate from 2008 through 2013.

Maine Public Service Company

In the case of MPS, commercial or industrial customers with two or more monthly metered demands of 50 kW or greater during the five winter months (November through March) are placed on a demand charge rate.⁸ In determining whether a customer's demand subjects it to the medium class rate, each rate class schedule has language that assists in defining the level of demand at which they are transitioned. For medium commercial customers, the rate schedule states maximum demand is at least 50 kW but less than 500 kW during any two of the five consecutive months from November through March. If a customer is considered for this rate, they must have, in the previous twelve-months, demand between 50 kW and 500 kW during at least two of the winter months. MPS monitors customer's demand through a demand meter that is reviewed on a monthly basis.

⁷ Customers whose demand exceeds 25kW threshold once or twice in the prior 12 months receive a letter informing them of the possibility of a transfer to the medium rate class.

⁸ As noted below in this Report, BHE and MPS have indicated that they plan to review and analyze the demand breakpoints in their existing rate schedules as part of a future process to align the rate structures of all customer classes within the newly merged company.

MPS provides both verbal and written notification of rate class changes to customers. MPS first attempts to contact the customer by phone to explain the change in rate class. If the customer cannot be reached by phone, MPS sends a letter explaining the rate class change. MPS also sends a follow-up letter regarding the rate change to customers it is able to contact by phone.

Once a customer has been transitioned to a rate class that has a separate demand charge, it will not become eligible to receive a non-demand charge rate until the customer's overall demand has fallen below 50 kW during the five winter months. The Company reviews the quarterly reports to determine whether a customer's usage has fallen below this demand threshold. Customers that are eligible to receive the lower rate are given a "best rate" option whereby they may transition back to the non-demand rate schedule if it is to their benefit.

Approximately 39 MPS customers were moved onto a demand based rate from a non-demand based rate between 2008 to June 2013.

Eastern Maine Electric Cooperative

For EMEC, commercial accounts with a demand of 50 kW or more receive a separate demand charge. Currently, EMEC has 28 commercial accounts that exceed the 50 kW threshold. Customer's demand is metered separately and charges are based on the highest 15 minute integrated kW demand for each month. For new services, the appropriate rate class is generally determined based on the projected load of a customer.

Over the past 5 years, EMEC states that there have not been any accounts that have been moved from the general service class to the large commercial class.

2. Impact on Seasonal Businesses

Central Maine Power Company

CMP commented that the demand charge does not have a disproportionate impact on seasonal customers when compared to other customers. CMP states that, like most customers, seasonal businesses see demand charges as a cost of doing business and as an opportunity to reduce costs. CMP states that, because it moves customers from the SGS to the MGS class only if the customer exceeds the demand threshold twice or more in a twelve month period, a seasonal customer is less likely than a year round customer to exceed the demand threshold because they take service for fewer months during the year.

From a policy perspective, CMP notes that the number of times a customer reaches a demand threshold is less important than the customer's maximum potential load on the system. CMP states that, like other utilities, it builds its electricity

delivery infrastructure to meet system peak conditions. Thus, CMP states that the fact that a customer may only contribute to this maximum load a few times during the year does not negate the need for the infrastructure. According to CMP, if customers were allowed to remain on a small commercial rate even though they exceeded the 20 kW threshold several times a year, those customers would not be contributing fully to the costs incurred by the utility in providing services to those customers.

Bangor Hydro Electric and Maine Public Service

BHE and MPS state that, despite some confusion by seasonal customers, the current rate structures (and the determination of demand and non-demand rates) are just and reasonable. MPS and BHE state that the infrastructure cost of supplying services to customers does not vary based on whether a particular seasonal customer's usage and high electricity demand occurs only a few months of the year or year round. Both MPS and BHE state that the intent of the demand rate mechanism is to recover from medium commercial customers the increased costs that their capacity requirements place upon the companies' T&D system. The companies states that this recovery is based on customers' metered kW demand and is intended to reasonably allocate those costs among all customers in that class.

BHE and MPS further notes that, although residential and small commercial customers' rates do not have a specific demand charge component, demand-related costs are built into the energy components of their rate schedules. According to BHE and MPS, trying to design a demand-based rate that addresses the needs of seasonal customers is challenging and problematic. Allowing seasonal customers to be exempt from demand-based charges, even though they may contribute to the needs for infrastructure on the system or upgrades, effectively shifts the costs of these upgrades in infrastructure to all of the ratepayers.

3. Impact on New Businesses

Central Maine Power

CMP states that new businesses are evaluated to determine their likely demand. New businesses (or new tenants to a former business that previously had not been on a separate demand related charge), will continue to receive service at the small commercial rate as long as those customers do not register demand over 20 kW twice in the previous twelve month period. CMP states that it works with new business owners to estimate their electricity delivery costs based on the business' usage projections.

Bangor Hydro Electric and Maine Public Service

In situations where a new business is seeking utility service or when an existing business has changed ownership, the practice of both companies is to determine the appropriate rate by use of a customer-provided load sheet or examining

the past usage profiles to determine the future likely usage of a customer. Unless a customer's or new tenant's usage pattern were to significantly vary from a previous customer, it would continue to receive service based on the rate of the prior customer. The companies would monitor usage based on reports and the customer would be transitioned only if its usage changed from the usage profile for the prior tenant or customer.

4. Impact on Business Innovation

Central Maine Power

Similar to its treatment of new businesses, CMP states that it works with businesses to estimate changes to electric delivery pricing based on changes in usage. The Company states that it discusses economic development programs (e.g., special rate contracts or pine tree zones) that could be used to offset increased electric costs. In CMP's experience, its rate structure has not been a deterrent to the growth businesses.

Bangor Hydro Electric and Maine Public Service

MPS and BHE are not aware of any situations over the last ten years where a customer was unwilling or unable to install a new technology due to potential demand charges. Under MPS' practice and rate schedules, which require demand thresholds to be exceeded two or more time times during the winter months (November through March), the Company states that it works with customers to minimize any impact by potential business innovation. MPS further points out that for many "seasonal" customers that operate during the summer months and do not operate during the winter months, the load characteristics are such that they will not incur any demand charge even though their overall kW demand during the summer months may exceed 50 kW or more.

5. Consideration of Changes to Demand Charge Terms and Conditions

Through its Inquiry, the Commission sought comments on suggested changes regarding utility demand charges and their implementation. In particular, the Commission sought comment on whether changing the demand threshold for customers (e.g., from 20kW to 25kW), reducing the demand charge for a given period of time, exempting customers from a demand charge if their usage only exceeds the threshold an established minimum number of times, or applying demand charges to all rate classes including residential and small commercial customer rates. The utilities and the OPA provided comments on these issues.

Central Maine Power Company

CMP is not in favor of changing the demand rate threshold under which a customer incurs a separate demand charge. The Company states that, although this

option may appear attractive to a subset of small commercial customers, it could result in higher costs for other customers depending on the load pattern of individual customers. CMP's view is that any changes to the overall demand rate threshold should be considered in the context of a general rate design proceeding to ensure appropriate and equitable revenue allocation between medium and small commercial customers.⁹ The Company states that arbitrarily establishing a different demand rate threshold could result in a new class of medium commercial customers that are paying for cost increases and effectively subsidizing customers that have been transitioned to the small commercial rate and no longer subject to demand charges. In addition, the Company states that the issue would be complicated by the need to reassign standard offer customers who now take service under medium commercial standard offer.

Bangor Hydro Electric and Maine Public Service

BHE and MPS indicate that they will continue to review and analyze the demand breakpoints in their existing rate schedules as part of a future process to align rate structures of all customer classes within the merged utility. As part of this process, MPS and BHE believe that it is possible that the 25 kW level may be increased. Part of this analysis would include an examination of the frequency with which customers can exceed the demand threshold before they are moved to a demand charge rate, as well as a determination of revenue requirement impacts and rate changes needed to remain revenue neutral. BHE and MPS plan to undertake this analysis once a new customer information system is implemented within the next two years.

With regard to applying demand charges to all rate classes including residential and smaller general rate customers, BHE and MPS state that demand charges add a level of complexity that can lead to customer confusion and frustration. As a result, BHE and MPS both state that smaller customers, particularly residential customers, are better served by the more simple method of recovering demand related costs through inclusion of such charges as part of an overall energy component.

Office of the Public Advocate

The OPA suggested three potential areas for consideration in the method by which demand charges are currently assessed: 1) examining an increase in the breakpoint between non-demand based rates and demand based rates, 2) dividing existing medium rate schedules into additional rate schedules, and 3) extending the number of times a customer must exceed a demand threshold before being transitioned to the medium class rate.

The OPA expressed a concern that CMP's current breakpoint of 20 kW

⁹ As noted earlier, a rate design proceeding is currently underway for CMP (Docket No. 2013-00168) and the case is currently expected to conclude in June of 2014.

may be low enough that customers that exhibit small commercial customer characteristics may be inappropriately moved to the medium commercial class based on exceeding the threshold only in the hotter summer months. Determination of an appropriate break point between the two rate schedules, according to the OPA, would require further analysis of general service customer load profiles on the utility's system.

During the October 7, 2013 meeting, the OPA generally agreed with the utilities that any substantial change to the implementation of demand charges should occur within the context of a comprehensive Commission review of a utility rate design.

IV. CONCLUSION

Based on our examination of the issues raised in the Resolve, the Commission concludes that no immediate changes (such as an increase to the demand breakpoints) to the implementation of utilities' demand charges are warranted. Moreover, any significant changes to utility demand charges should occur in the context of a comprehensive rate design proceeding in which all implications of the manner in which utilities charge their customers can be carefully examined. As noted above, such a rate design proceeding is currently underway for CMP (Docket No. 2013-00168).

The Commission further emphasizes that all customers currently pay for demand-related costs, whether they are small or medium commercial businesses or residential customers. While medium commercial customers may pay for them through a demand charge, small commercial and residential customers pay for these same types of costs through their energy charges. Because rate design is revenue neutral, any changes to demand charges that would lower the costs to some businesses would raise costs to other businesses.

The basic purpose of demand charges is to provide a price signal regarding peak usage and to equitably allocate the costs of the utility's system among customers. The fact that a customer, such as a seasonal customer, may only contribute to peak conditions during a few months of the year does not negate the need for system infrastructure to meet peak conditions. Moreover, many seasonal customers in Maine operate during the summer months during which utility peak load conditions occur. Consequently, if seasonal customers are not required to pay for the cost of system infrastructure needed to serve load at peak times, the costs of that infrastructure would be shifted to other customers.

Regarding new businesses, Maine's utilities do work with customers to monitor their usage pattern and load characteristics to determine if and when they should be transitioned to a rate that incurs a separate demand charge. Moreover, as pointed out in several comments by the utilities, the fact that a business may be transitioned to a rate that incurs a separate demand charge does not necessarily mean that such customer would pay more for electricity service. Rather, as discussed earlier in this Report, customers with high load factors and with relatively high kWh usage are likely to have lower bills under a rate that has a separate demand charge.

Finally, the Commission's Inquiry did not reveal any information that the existence of the potential to move from the small commercial class to the medium commercial rates that contain demand charges serves as a deterrent to business innovation.¹⁰

¹⁰ The Commission notes that the language in the Resolve appears to assume that business innovation necessarily means higher electricity usage. In many instances, business innovation is furthered through technological or business advancements that may include energy conservation or energy efficiency measures.