

Reading Municipal Light Department (RMLD) Board of Commissioners
Power & Rate Committee Regular Session Agenda
Joint Meeting with the Citizens' Advisory Board
Wednesday, January 12, 2011
7:30 p.m.
Winfred Spurr/Board Room

1. Regular Session

Call Meeting to Order.

2. Executive Session - Power Supply Contracts

Suggested Motion:

Move that the Board go into Executive Session, to discuss Concord Power and Steam, LLC and Swift River Trading Company, LLC based on Chapter 164 Section 47D exemption from public records and open meeting requirements in certain instances and return to Regular Session.

Note: Polling of the Power & Rate Committee members is required.

3. Return to Regular Session

4. Power Supply Contracts

- Concord Power and Steam, LLC
- Swift River Trading Company, LLC

5. Addendum to FY 11 Cost of Service Study

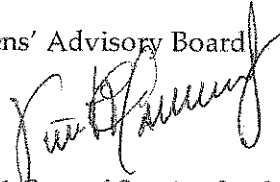
6. Motion to Adjourn

READING MUNICIPAL LIGHT DEPARTMENT

To: RMLD Board, Citizens' Advisory Board

Date: December 28, 2010

From: Vinnie Cameron



Subject: Addendum to FY11 Cost of Service Study

The Reading Municipal Light Department (RMLD) has revised its Residential and Industrial Time of Use rates, which were filed in August of this year. The proposed changes to these rates reflect a wider difference between the On-Peak and Off-Peak rates and decreasing the amount of On-Peak hours. The RMLD has developed an Addendum to the FY11 Cost of Service Study, which describes the proposed changes to both rates.

The result of these proposed changes shows that based on the average customer use in the Residential and Industrial Time of Use rates, these customers should see a slight decrease in their monthly bills. The estimated effect of the new rates is revenue neutral.

The attached addendum is being presented to the RMLD's Power and Rate Committee and the Citizens' Advisory Board on January 12, 2011.

c: Jane Parenteau
Bill Seldon
Joe Bilicki
Jared Carpenter

Addendum to the FY2011 Cost of Service Study

The Reading Municipal Light Department (RMLD) filed a rate change with the Massachusetts Department of Public Utilities (MDPU) on August 1, 2010. The rate change was based on a Cost of Service Study (COSS), developed by the RMLD and approved by the RMLD Board of Commissioners on July 28, 2010. All RMLD electric rates were filed with the MDPU at this time. The Residential A-Rate, Residential A-Water Heating Rate and the Commercial C-Rate all experienced base rate increases. In addition, the Purchased Power Adjustment (PPA) was readjusted and the increased Base Purchased Power costs from FY08 through FY10 were rolled into the Base Energy rates of all the customer classes.

When the RMLD filed its rate increase the RMLD told the RMLD Board of Commissioners that the Time of Use Rates and the Street Lighting Rates were going to be further studied and filed with changes (after the ninety day limit for re-filing rates). The following is a discussion of the proposed adjustments to the Residential Time of Use (RTOU) Rate and Industrial Time of Use (ITOU) Rate. The Street Light Rate analysis is presently ongoing.

On-Peak /Off-Peak Period

Both the RTOU and the ITOU rates have On-Peak and Off-Peak periods that delineate what constitutes On-Peak and Off-Peak energy usage. The existing rates have an On-Peak period of 10 am to 8 pm weekdays excluding holidays. The Off-Peak hours are all other hours. The RMLD has examined its monthly peak demands over the last two years and has found the monthly peak demands have occurred between 12 pm and 7 pm. The existing On-Peak and Off-Peak period were based on the RMLD's analysis performed in 1993, when the Time of Use rates were developed for the RMLD's rate structure.

The RMLD is recommending that the On-Peak hours be changed to 12 pm to 7 pm. The RMLD has examined the 2009 monthly peak days for two feeders, 3W7 and 3W14, which are largely residential feeders. The hourly readings for the day of each monthly peak day were totaled by hour. The RMLD then compared the difference in kWh use on the feeder data by changing the On-Peak period from 10 am to 8 pm. The difference resulted in a decrease of On-Peak kWh usage from 30% to 23.2%.

The reduction in On-Peak hours is also proposed for the ITOU rate. The RMLD examined the hourly demand data of five of the largest ITOU customers and that changing the On-Peak period to 12 pm to 7 pm would result in a decrease of On-Peak usage from 32.29% to 22.7%.

Later in this addendum the change in the RTOU and ITOU On-Peak/Off-Peak periods will be analyzed to determine the impact on the RMLD's revenue requirement.

On-Peak/Off-Peak Differential

The RMLD has determined that the differential between the On-Peak and Off-Peak TOU rates need to be expanded so that it is more reflective of energy pricing that occurs in the New England Power Pool (NEPOOL).

In order to determine the expanded differential between the On-Peak and Off-Peak hours the RMLD analyzed the calendar year 2009 Hourly Locational Marginal Prices (LMP) in NEPOOL to determine the difference between the On-Peak and Off-Peak rates for the RTOU and ITOU rates. The RMLD examined the 200 highest priced hours in NEPOOL during the calendar year 2009 to determine the On-Peak pricing. The 200 hour period was used because peaking generating units are expected to run an average of 200 hours a year to shave peak load. The average LMP of the 200 highest price hours for the calendar year 2009 was \$116.46/MWh. The average price for the remainder of the hours for 2009 was \$40.05/MWh. The differential is 2.91 or the average 200 highest LMPs in 2009 is almost three times higher than the average price for the remainder of the year.

To On-Peak and Off-Peak rates for both the RTOU and ITOU rates were adjusted to reflect the difference in the On-Peak and Off-Peak prices in ISO-NE, however, the difference also had to reflect a revenue neutral effect on the ratepayers in each class. The RTOU rates were adjusted so that the difference between the On-Peak rate (\$.13364/kWh) and the Off-Peak rate (\$.04061/kWh) reflected a multiplier of 2.9. The ITOU rates were adjusted to \$.08848/kWh for the On-Peak period and \$.02535/kWh for the Off-Peak period. The difference reflects a multiplier of 3.3, which is marginally higher than the ISO-NE pricing difference mentioned above. The adjustments to these rates will more effectively reflect the differential seen in the NEPOOL On-Peak/Off-Peak pricing.

Residential Time of Use Rates

The RTOU Rate has been part of the RMLD's rate structure since the early 1990s and is made up of an On-Peak Rate (higher kWh cost) and an Off-Peak Rate (lower kWh cost), in addition to other charges common to other residential rates. The purpose behind the RTOU is to give customers financial encouragement to decrease On-Peak energy usage or move electricity usage from the On-Peak period to the Off-Peak period.

Table 1 shows an analysis of the Residential A-Rate as compared to the RTOU rate. The first block in Table 1 shows the average monthly cost of the Residential A-Rate at a monthly usage of 815 kWh, a Customer Charge of \$3.47/month, a Base Energy Charge of \$.08365/kWh, an Energy Conservation Charge of \$.0005/kWh, the HazMat charge of \$.001/kWh, Purchased Power Adjustment (PPA) of \$.00073, a PASNY Credit of \$.00095/kWh, the prompt payment discount of 10%, and a Fuel Cost of \$.059/kWh. The resulting cost is \$113.43 or a unit cost of \$.1392/kWh.

Table 1

Comparison of the Residential A-Rate and the Residential Time of Use Rate

851 kWh Monthly Usage

Existing	Residential A Rate
815	\$3.47
815	\$0.083650
815	\$0.000500
815	\$0.001000
815	\$0.000730
815	\$0.059000
815	-\$0.000950
	-10%
	(\$7.35)
	\$113.43
	\$0.1392

Existing	Residential TOU Rate
815	\$5.51
326	\$0.08260
489	\$0.06140
815	\$0.00050
815	\$0.00100
815	\$0.00073
815	\$0.05900
815	-\$0.00095
	-10%
	(\$6.43)
	\$105.16
	-\$8.26
	-7.86%
	\$0.1290

Proposed	Residential TOU Rate
815	\$5.51
326	\$0.13364
489	\$0.04601
815	\$0.00050
815	\$0.00100
815	\$0.00073
815	\$0.05900
815	-\$0.00095
	-10%
	(\$7.34)
	\$113.37
	(\$0.06)
	-0.05%
	\$0.1391

The next block shows the same average monthly residential usage (815 kWh) applied to the existing RTOU rate at a 40% On-Peak and 60% Off-Peak energy usage split. The resulting average monthly cost is \$105.16 or a unit cost of \$.1290/kWh. Presently, the difference between the Residential A Rate and the RTOU rate is approximately \$8.26 or 7.86%.

As mentioned above, the existing difference between the On-Peak and Off-Peak rate needs to be increased to create more of an incentive for moving kWh from the On-Peak period to the Off-Peak period.

The third block on Table 1 shows the proposed RTOU rate. The On-Peak rate unit cost is \$.1391/kWh, which represents the existing On-Peak of \$.13364/kWh and an Off-Peak rate of .04601/kWh.

The resulting cost for a RTOU rate customer using 815 kWh per month at a 40%/60% split is \$113.37, which is \$.06 or .05% less than the equivalent billing for a customer on the Residential A-Rate. The results of this study show that the 40% On-Peak and 60% Off-Peak split is the point of indifference between whether a customer is billed on the Residential A-Rate or the RTOU rate.

Table 2 shows the monthly cost an average customer would pay on the RTOU Rate and the savings at multiple On-Peak/Off-Peak splits.

Table 2
Average Residential A-Rate Customer
Billed under the RTOU Rate

<u>Monthly kWh</u>	<u>On-Peak</u>	<u>Off-Peak</u>	<u>Cost</u>	<u>Savings</u>	<u>Percent</u>
815	40%	60%	\$113.37	\$0.06	0.05%
815	35%	65%	\$110.15	\$3.28	2.97%
815	30%	70%	\$106.94	\$6.49	6.07%
815	25%	75%	\$103.72	\$9.70	9.35%

According to Table 2, as the On-Peak usage decreases the savings increase. This is due to the customer shifting kWh usage from the On-Peak to the Off-Peak period.

Table 3 shows a similar analysis as in Table 1; however the average monthly energy usage is 1,151 kWh, which is the average for a customer on the RTOU rate, which was used in the FY11 Cost of Service Study. The first block shows that an average RTOU customer will pay \$158.90 under the Residential A-Rate. The second block shows that the average RTOU customer would pay \$146.47 under the existing RTOU Rate, which is \$12.43 or 8.49% less than the Residential A-Rate. The third block shows that the same

Table 3

Comparison of the Residential A-Rate and the Residential Time of Use Rate

1,151 kWh Monthly Usage

Existing	Residential A Rate
1,151	\$3.47
\$3.47	\$96.28
1,151	\$0.083650
1,151	\$0.000500
1,151	\$0.001000
1,151	\$0.000730
1,151	\$0.059000
1,151	-\$0.000950
	-10%
	(\$10.23)
	\$158.90
	\$0.1381

Existing	Residential TOU Rate
1,151	\$5.51
\$5.51	\$38.03
480	\$0.08260
691	\$0.06140
	\$42.40
1,151	\$0.00050
1,151	\$0.00100
1,151	\$0.00073
1,151	\$0.05900
1,151	-\$0.00095
	-10%
	(\$8.85)
	\$146.47
	\$0.1273

Proposed	Residential TOU Rate
1,151	\$5.51
\$5.51	\$61.53
480	\$0.13364
691	\$0.04601
	\$31.78
1,151	\$0.00050
1,151	\$0.00100
1,151	\$0.00073
1,151	\$0.05900
1,151	-\$0.00095
	-10%
	(\$10.14)
	\$158.06
	\$0.1373

customer on the proposed RTOU rate will pay \$158.06 at a 40%/60% split, which \$.84 or .53% less than the equivalent billing on the Residential A-Rate.

Table 4 is similar to Table 2 and shows the savings an average RTOU customer would save being billed under the proposed RTOU as compared to being billed under the Residential A – Rate, at different On-Peak/Off-Peak usage levels.

Table 4
Average RTOU Customer
Billed Under the RTOU Rate

<u>Monthly kWh</u>	<u>On-Peak</u>	<u>Off-Peak</u>	<u>Cost</u>	<u>Savings</u>	<u>Percent</u>
1,151	40%	60%	\$158.06	\$.84	.53%
1,151	35%	65%	\$153.52	\$5.38	3.51%
1,151	30%	70%	\$148.98	\$9.92	6.66%
1,151	25%	75%	\$144.44	\$14.46	10.01%

As the On-Peak percentage of energy use decreases, the monthly cost and the unit cost will decrease. In addition, as the overall monthly usage increases (815 kWh versus 1,151 kWh) the savings at the different split levels also increases because more energy is being used Off-Peak.

Table 5 shows the effect of applying the proposed RTOU rates to the Revenue Proof calculation that was used in the FY11 Cost of Service Study. The forecast split of the On-Peak/Off-Peak used in the revenue proof in Table 5 is 25%/75%, which is reflective of the 23.2%/77.8% split from the 3W7 and 3W14 feeder data. The resulting Forecast Class Total revenue is \$116,379, which is \$1 less than the Reallocated Revenue Requirement Class Total from the Cost of Service Study of \$116,380.

Industrial Time of Use Rate

The Industrial Time of Use Schedule (ITOU) Rate has been a part of the RMLD's rate structure since 1993. The rate is designed for high load factor commercial/industrial customers that have two or three shift operations and also have the flexibility to move electricity usage to the Off-Peak periods. The proposed On-Peak and Off-Peak periods are the same as in the proposed RTOU rates. The ITOU rate structure is similar to the RTOU rate; however, the ITOU rate also has a demand component. The ITOU rate has a monthly demand charge, which is calculated based on the highest demand recorded during the On-Peak period.

Table 6 shows the monthly billing for an average commercial customer being billed under the Commercial C-Rate. The average commercial customer has a monthly demand of 20 kW and monthly energy usage of 5,229 kWh, which results in a load factor

**Table 5
Revenue Proof
Residential Time of Use Rate**

Reading Municipal Light Department
Electric Cost of Service/Unbundling Study
 Forecasted Test Year Ending June 30th, 2011
 Revenue Proof

RESIDENTIAL TOU

	Forecasted Revenues at Current Rates			Potential New Rate		
	Year Ending 6/30/11 Units	Test Year Rate	Calculated Year Ending 6/30/11 Revenue	Year Ending 6/30/11 Units	Test Year Rate	Estimated Revenue
Customer:						
Total Customers	1,572	-	8,662	1,572	-	8,662
Customer Charge	1,572	5.51	8,662	1,572	5.51	8,662
Energy:						
Total Energy	1,808,521	-	-	1,808,521	-	-
On-Peak Energy	542,083	0.08261	44,781	438,496	0.13364	58,600
Off-Peak Energy	1,211,902	0.06135	74,350	1,315,489	0.04601	60,529
TOU Water Heater	54,536	0.03500	1,909	54,536	0.03500	1,909
Adjustments:						
PPA	1,808,521	0.00073	1,320	1,808,521	0.00073	1,322
Energy Audit	1,808,521	-	-	1,808,521	-	-
Pasny Credit	1,808,521	0.00095	(1,711)	1,808,521	0.00095	(1,711)
Discounts		10%	(12,931)		10%	(12,931)
	Forecast Class Total		\$ 116,380	Forecast Class Total		\$ 116,379
	Revenue Req. Class Total		\$ 116,380	Revenue Req. Class Total		\$ 116,380
	Change in Rate Required (%)		0.00%	Reallocated Revenue Req. Class Total Difference (\$)		1

Table 6
Comparison of the Commercial C-Rate and the Industrial Time of Use Rate

Average Commercial Customer

	Existing	Commercial C - Rate	Existing	Industrial TOU Rate	Proposed	Industrial TOU Rate	Monthly Aver. kWh Usage
Customer Charge	\$6.58	\$6.58	\$27.54	\$27.54	27.54	\$27.54	
Demand kW	20	\$6.8769	\$7.90	\$156.85	7.90	\$156.85	20
Base Energy Rate kWh	5,229	\$0.04893					5,229
Load Factor	36.1%						36.1%
Base Energy On-Peak Rate			\$0.04835	\$101.13	0.08448	\$110.44	1,307
Base Energy Off-Peak Rate			\$0.03622	\$113.63	0.02535	\$99.43	3,922
							5,229
Conservation Charge	5,229	\$0.00100	\$0.00100	\$5.23	0.00100	\$5.23	5,229
HazMet Charge	5,229	\$0.00100	\$0.00100	\$5.23	0.00100	\$5.23	5,229
Purchased Power Adjustment	5,229	\$0.00073	\$0.00073	\$3.82	0.00073	\$3.82	5,229
Fuel Charge	5,229	\$0.05900	\$0.05900	\$308.51	0.05900	\$308.51	5,229
Discount	-10%		-10%	(\$41.34)	-10%	(\$40.85)	
Total		\$680.48	\$0.12	\$680.59		\$676.19	-\$4.29
Unit Cost: (\$/kWh)		\$0.1301	0.02%	\$0.1302		\$0.1293	-0.634%

of 36.1%, which is low compared to customers on the ITOU rate. The load factor represents how efficiently a customer uses electricity by comparing peak demand (kW) to monthly energy (kWh). These average commercial customer usage levels were taken from the FY11 Cost of Service Study.

The billing in the first block shows that this customer would pay \$680.48 under the Commercial C-Rate. The second block shows the average commercial customer being billed under the existing ITOU rate, which at an On-Peak/Off-Peak split of 40%/60%, would cost \$680.59, which is \$.12 or .02% higher than the billing under the Commercial C-Rate.

The third block shows the proposed ITOU rate, which is similar to the existing ITOU rate, however, the On-Peak rate has been increased to \$.08448/kWh and the Off-Peak rate has been decreased to \$.02535. The average commercial customer with a monthly 40%/60% On-Peak/Off-Peak would be billed \$717.92, which is \$37.45 or 5.2% higher than the equivalent billing under the Commercial C-Rate.

Table 7 shows an average commercial customer having a monthly On-Peak/Off-Peak split of 40%/60% will be billed \$717.92 or an additional \$37.45 or 5.22% more than they would be if they were billed under the Commercial C-Rate.

Table 7
Average Commercial C-Rate Customer
Billed Under the ITOU Rate

<u>Monthly kW/kWh</u>	<u>On-Peak</u>	<u>Off-Peak</u>	<u>Cost</u>	<u>Savings</u>	<u>Percent</u>
20 5,229	40%	60%	\$717.92	(\$37.45)	(5.22%)
20 5,229	35%	65%	\$704.01	(\$23.54)	(3.43%)
20 5,229	30%	70%	\$690.10	(\$9.62)	(1.39%)
20 5,229	25%	75%	\$676.19	\$4.29	.63%

An average commercial customer will not see savings on the ITOU rate until it reaches a 25%/75% split. This occurs mainly because the customer's load factor is 36.1%, which is too low to reasonably save money on the ITOU rate.

The RMLD then analyzed what a typical ITOU customer would pay on the Commercial C-Rate versus the ITOU Rate. Table 8 is similar to Table 6 and shows in the first block the monthly billing for a typical ITOU customer having an average monthly demand of 853 kW and average monthly energy of 435,702 kWh, which is from the bill frequency in the FY11 Cost of Service Study. The average ITOU customer would pay \$51,252.19 under the Commercial C-Rate, as shown in the first block of Table 8.

In the second block of Table 8 shows cost for the same customer being billed under the existing ITOU Rate at an On-Peak/Off-Peak split of 40%/60%, resulting in a cost of \$48,973.38, which is \$2,278.81 or 4.65% less than the equivalent billing on the Commercial C-Rate.

The third block on Table 8 shows the proposed ITOU Rate, which is similar to that shown in Table 6. At a 40%/60% On-Peak/Off-Peak split the resulting cost for an average Industrial Customer on the ITOU rate is \$52,084.08, which is \$831.89 or 1.6% more than the equivalent billing on the Commercial C-Rate.

Table 9, is similar to Table 7, and shows the amount of billing and relative savings for an average Industrial Customer being billed under the proposed ITOU rate as compared to the Commercial C-Rate, at different On-Peak/Off-Peak usage levels.

Table 9
Average ITOU Customer
Being Billed under the ITOU Rate

<u>Monthly kW/kWh</u>	<u>On-Peak</u>	<u>Off-Peak</u>	<u>Cost</u>	<u>Savings</u>	<u>Percent</u>
853 435,702	40%	60%	\$52,084	(\$832)	(1.60%)
853 435,702	35%	65%	\$50,924	\$327	.643%
853 435,702	30%	70%	\$49,765	\$1,487	2.97%
853 435,702	25%	75%	\$48,606	\$2,646	5.44%

According to Table 9, an average Industrial Customer, as defined in the FY11 Cost of Service Study, has an average monthly demand of 853 kW and monthly energy usage of 435,702 kWh. Table 9 also shows that an average Industrial Customer will not realize credible savings until it reaches a 35%/65% split, which will afford them an average monthly savings of \$327 or .643%.

The reason behind the Industrial Customers savings on the ITOU Rate is linked to the fact that the average ITOU customer has a 70% load factor, which means more energy is being used relative to the monthly demand and equates to more Off-Peak energy usage at a lower kWh charge.

As the On-Peak energy usage decreases the savings increase to a point where, at a 25%/75% split, the monthly savings on the ITOU Rate is \$2,646 or 5.44%.

Table 10 shows the Revenue Proof for the proposed ITOU Rate, which includes both the On-Peak/Off-Peak period change and the proposed rates. The forecast split of the On-Peak/Off-Peak used in the revenue proof in Table 5 is 25%/75%, which is reflective of the 22.7%/78.3% split seen in customers on the ITOU Rate. The resulting revenue from the

Table 10
Revenue Proof
Industrial Time of Use Rate

Reading Municipal Light Department
Electric Cost of Service/Unbundling Study
Forecasted Test Year Ending June 30th, 2011
Revenue Proof

	Forecasted Revenues at Current Rates			Potential New Rate		
	Year Ending 6/30/11 Units	Test Year Rate	Year Ending 6/30/11 Revenue	Rate (\$)	Test Year Units	Estimated Revenue
Customer:						
Total Customers	516	\$ -	\$ -	\$ -	516	\$ -
Customer Charge	516	27.54	14,211	27.54	516	14,211
Demand:						
Total Demand	440,231	7.90	3,477,827	7.90	440,231	3,477,827
Energy:						
Total Energy	224,822,454	-	-	-	224,822,454	-
On-Peak Energy	72,595,208	0.04835	3,509,978	0.08448	56,205,613	4,748,306
Off-Peak Energy	152,227,246	0.03622	5,513,671	0.02535	168,616,840	4,275,111
Energy Conservation Charge	224,822,454	-	-	-	224,822,454	-
PPA	224,822,454	0.00073	164,120	0.00073	224,822,454	164,345
Discounts	1	10%	(1,267,981)	10%	-	(1,267,980)
	Forecast Class Total		\$ 11,411,826		Forecast Class Total	\$ 11,411,820
	Revenue Req. Class Total		\$ 11,411,826	Reallocated Revenue Req. Class Total		\$ 11,411,826
	Change in Rate Required (%)		0.00%	Difference (\$)		6

proposed ITOU Rate is \$11,411,820, which is \$6 or basically revenue neutral to the Reallocated Revenue Requirement Class Total of \$11,411,826.

Summary

The RMLD is recommending that the RTOU and the ITOU rates be adjusted as presented in this addendum, which should encourage customers to move to the Time of Use rates and create more energy usage in the RMLD's Off-Peak period. The recommended revenue adjustments to both the RTOU and the ITOU rates are revenue neutral for both the RTOU and ITOU rate classes.