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Island Regulatory and Appeals Commission
IRAC, UE20938

IN THE MATTER of an application by Maritime Electric Company, Limited for approval of proposed amendments to its rates, tolls and charges for electric service.

The Environmental Coalition of Prince Edward Island's Comments and Recommendations

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About Us

The **Environmental Coalition of PEI** (ECO-PEI) is a community-based action group formed in 1988. ECO-PEI's goal is to work in partnership with others and indeed the land itself in order to understand and improve the Island environment. Our work centres on education, advocacy and action.

The **Atlantic Canada Sustainable Energy Coalition** (ACSEC) is an alliance of four community-based, environmental organizations, including ECO-PEI, offering expertise in policy research and analysis, project implementation, and public education. ACSEC takes action on climate change by promoting a strategy for the adoption of renewable, green energy and improved energy efficiency that is rooted in sound community economic development. The initial phases of ACSEC have been made possible by funding from the Kendall Foundation in the United States.

Fossil fuel prices have experienced extreme fluctuations over the last few years with oil reaching $147 a barrel in July 2008. Only months later the price has dropped by two thirds, however the consensus appears to be that this low is due to the current economic downturn rather than an abundance of supply and is therefore temporary. As the economy recovers and global energy demand increases it is predicted that prices will creep back up to high heights. Adding to the future price of fossil fuel based energy will be the cost associated with carbon dioxide regulations. Now well established that human-induced climate change requires significant action to mitigate the most extreme impacts, momentum is building toward creating clean energy systems. Electric utilities must anticipate these future costs in order to make long-term resource planning and investment decisions which are economically justifiable and socially responsible.

At this time Prince Edward Island is heavily dependent on imported fossil fuel generated electricity and therefore vulnerable to future price increases. It is against the backdrop of volatile fuel prices, a heavy dependence on foreign conventional energy supplies, and significant vulnerability to the impacts of climate change that the Environmental Coalition makes the following comments in response to Maritime Electric Company, Limited's application for approval of proposed amendments to its rates, tolls and charges for electric service.

In September 2008 Maritime Electric Company, Ltd. (MECL) filed an application for approval of proposed amendments to its rates, tolls and charges for electric service with the Island Regulatory and Appeals Commission (IRAC). In the application MECL proposes that Basic Rates be increased to reflect the rebasing of the energy cost adjustment mechanism (ECAM). The increase of the base amount for energy related costs is being sought to reflect the increase in

costs for the electricity MECL purchases/produces to meet the requirements of its customers. Maritime Electric sites the transition to New England Market based pricing, increases in the fossil fuel costs used to generate electricity and the cost to procure replacement energy during the refurbishment of the Point Lepreau Nuclear Generating plant as the driving factors for higher energy costs. The following two tables summarize MECL's proposed rate changes.

Table 1: Proposed ECAM* Base Rate per kWh (2009-2012) ($)[1]

	April 1, 2009	April 1, 2010	April 1, 2011	April 1, 2012
Proposed ECAM Base Rate per kWh ($)	0.0770**	0.0900	0.1000	0.1100

*Energy Cost Adjustment Mechanism (ECAM)
**Current ECAM base rate is $0.0673/kWh

Table 2: Proposed Increase in Basic Rates Due to Rebasing (2009-2012) (%)[2]

	April 1, 2009	April 1, 2010	April 1, 2011	April 1, 2012
Proposed Increase in Basic Rates (%)	8.40	9.80	6.90	7.40

The proposed rate increases are being sought primarily to reflect higher fossil fuel prices. If MECL continues to rely heavily on fossil fuel generated electricity to serve its customers (~84%)[3] with minimal demand side investment, the financial repercussions will be significant for both the Company and its customers in the future.

[1] Maritime Electric's application for approval of proposed amendments to its rates, tolls and charges for electric service (2008)
[2] Ibid
[3] Ibid

It must be acknowledged that no portion of the proposed rate increase is designed to cover strategies for energy efficiency, demand response or local distributed generation investments which have the potential to increase PEI's energy security, reduce long-term electric rates if supply in the region is more costly than efficiency, create employment opportunities in the Province, reduce GHG emissions in the region, and reduce electric customers' bills. As it is currently designed, MECL's rate application would further embed us into the status quo; heavy reliance on imported fossil fuel generated electricity, lack of pricing signals to encourage customers to adopt energy efficient behaviour, and minimal services for assisting customers to improve their efficiency and use less electricity.

Utility Investment in Energy Efficiency

Modern societies depend on energy, including electricity for their development and well-being. Electricity must be produced from other sources of energy and then sold and delivered to customers by a provider (such as a utility like Maritime Electric). Traditionally a utility forecasts sales for the upcoming year or two and then makes decisions on how to meet this demand, generally selecting the cheapest supply options that are available to them. Once these costs are determined the utility's revenue requirement is established which allows the utility to recover operating costs, energy related costs for purchased and/or produced electricity and an approved rate of return on equity. Dividing the revenue requirement by forecast sales establishes the electric rates charged by the utility to customers.

In other jurisdictions utilities treat efficiency as a reliable resource option to be considered alongside additional supply. Utilities invest in efficiency to diversify their portfolio, lower costs,

and meet customer demand. Efficiency has the added benefit of being a local, abundant resource with investments resulting in significant local economic as well environmental benefits. Early in 2008 Prince Edward Island released its *Energy Efficiency Potential Study for Prince Edward Island* which explicitly illustrates that there is tremendous cost-effective energy savings to be had by investing in efficiency initiatives. In the electricity sector the study found that two thirds of the forecast load growth in 2017 could be offset by efficiency investments assuming a growth rate for demand of 2% (2008-2017). Assuming a more modest growth rate of 1.3%, load growth could actually be levelled by 2017 according to the study's determinations of available cost-effective efficiency[4]. Managing load growth through efficiency reduces the need for added capacity and capital investment, saves customers money, and reduces greenhouse gas emissions (GHG) emissions.

MECL continues to rely primarily on fossil fuel based electricity, overlooking the potential of cost-effective efficiency investment. One policy mechanism which would reform Maritime Electric's resource planning process, prioritizing efficiency, is a least cost procurement mandate. Under a least cost procurement mandate Maritime Electric would be required to invest in all cost-effective electric efficiency before investing in additional supply. Although this mandate does not allow MECL the option to continue doing business as usual in regards to resource planning, Maritime Electric would still face important financial disincentives to aggressive investment in efficiency resources.

Traditional ratemaking approaches have strongly linked a utility's financial vigour to the volume of electricity it sells, creating a disincentive to investment in cost-effective demand-side resources that reduce sales, including efficiency. Revenue recovery is linked to sales and thus it is in the utility's best financial interest to increase sales. The corresponding inherent disincentive to efficiency investment

[4] Environment Northeast (2008). *Written Comments of ENE on the PEI Energy Strategy Discussion Document*. Author: Leslie Malone.

must be eradicated if efficiency is to be viewed on a level playing field alongside traditional supply options. Decoupling profits and fixed cost recovery from sales volume removes the powerful incentive for utilities to increase sales and neglect efficiency.

Decoupling

Rather than receiving their revenue requirement through a connection to sales volume, utilities can be regulated in a way such that reductions in sales from energy efficiency are not disagreeable. For example, a utility's revenues could be connected to the number of customers instead of sales. Under this rate structure as the utility becomes more efficient and reduces costs, profits increase. The utility is not financially hurt by efficiency under this approach because if sales go down for any reason, revenues and profits will not be affected. A true up of actual results to forecast results is an important part of revenue decoupling. If more revenue is collected than agreed upon it is returned to customers, if too little is collected it is recouped in the following year.

Maritime Electric's proposed rate increases do not reflect investment in demand side resources such as efficiency, nor does MECL have existing aggressive demand side management services to assist customers in responding to higher rates. This is particularly concerning in the case of low and fixed income customers who will be most severely affected by these increases. This is unacceptable in light of well established experience with efficiency investment in many jurisdictions. Efficiency resources reduce vulnerability to foreign fuel prices for both MECL and its customers, create local employment opportunities, and reduce greenhouse gas emissions.

RECOMMENDATIONS

- *The Island Regulatory and Appeals Commission should support a least cost procurement mandate for utilities in Prince Edward Island which requires that they invest in all cost-effective energy efficiency before acquiring additional supply. Rate increases to cover*

increasing fossil fuel costs while not investing in comprehensive demand resources including all cost-effective efficiency should be considered unjust and unreasonable.

- *Investigate decoupling utility profits from sales volumes. Steps should be taken to decouple profits from sales volumes as a key measure toward removing the utilities' disincentive to encourage greater efficient use of the electricity they sell. Greater amounts of demand side initiatives would provide assistance to customers to reduce their annual electricity expenditure and would allow utilities to do so without being financially hurt.*

Customer Investment in Energy Efficiency

Retail electricity rate structures and prices influence customer consumption and therefore are an important tool for encouraging the adoption of energy efficiency technologies and practices. Energy efficiency is often overlooked in lieu of other objectives utilities try to balance when designing rate structure. Since a primary function of rates is to allow utilities to collect their revenue requirements, utilities tend to like rate designs which provide maximum stable revenues like the declining block rate used by Maritime Electric for each of its customer classes. The declining block rate has two or more tiers of usage, each tier having a different price per kilowatt hour (kWh) with the highest rates in the first tier. Typically the first tier is a low monthly usage level that the majority of customers exceed. This rate provides a high degree of certainty to the utility concerning the total kilowatt-hours that will be billed in Tier 1, offering stability to the collection of fixed costs. The second tier having lower rates encourages higher energy consumption rather than efficiency, creating a barrier to fully realizing the benefits of energy efficiency. Because efficiency measures are most likely to change customer usage in Tier 2, customers will see smaller bill reductions under declining block rates than under alternative rate structures[5]. The following table is an exert from Maritime Electric's Draft Basic rates included in

[5] National Action Plan for Energy Efficiency (July 2006). Chapter 5

their rate application and illustrates a declining block rate for each of the shown customer classes.

Table 3: Exert from Maritime Electric's Draft Basic Rates for 2009[6]

Block	Price ($/kWh)
Residential Rural	
0-1600 kWh	0.1178
Greater than 1600 kWh	0.0914
General Service I	
0-5000 kWh	0.1472
Greater than 5000 kWh	0.0927
Small Industrial	
0-100 kWh per kW billing demand	0.1440
Greater than 100 kWh per kW billing demand	0.0675

Rate structures like the declining block rates which Maritime Electric is currently using and continues to propose in this, their latest rate application, create a barrier to customer adoption of energy efficiency because they reduce the savings that customers can realize from reducing usage. In turn electricity demand is more likely to increase which could lead to long-term higher rates and bills where new supply is more costly than energy efficiency.

Inclining Block Rates

One alternative rate design which utilities can use to promote electric efficiency behaviour in customers is inclining block rates. Inclining block rates or inverted block rates have per-unit prices that increase for each successive block of energy consumed.

Table 1: Sample Inclining Block Rate

Block	Price ($/unit)
0 to 2000 units	0.11
2001 to 4000 units	0.12
Greater than 4000 units	0.13

[6] Maritime Electric's application for approval of proposed amendments to its rates, tolls and charges for electric service (2008)

*Numbers used in this table are for illustrative purposes only.

Inverted block rates are considered advantageous because they are simple to understand and simple to meter and bill. Inclining block rates use induction meters, commonly used by utilities today and therefore do not require investments in smart meters. For this reason this rate structure also tends to be less costly for customers, particularly important to residential customers. This lower cost for infrastructure must be weighed against other objectives for the electric sector. Smart meters provide customers with energy information that they have not had available to them in the past which has led to customers being more efficient with their electricity use overall, even when not subject to time of use rates. Smart meters also allow for more precise measurement and verification of electricity reductions and associated decreases in GHG emissions. These social and environmental attributes that smart meter investments offer are important to consider.

Small electricity users can be protected using inclining block rate design if the first tier is designed to provide a small base level of electricity to all residential customers at a low rate. The higher rates are then only charged on consumption above that base level.

Time of Use Rates (TOU)

A second alternative to a declining block rate structure is time of use rates. Under this structure varying charges are established by season or time of day. A variety of designs exist ranging from simple on-and-off peak rates that are constant year-round to more complex rates with seasonally differentiated prices for several time of day periods. TOU rates have commonly been offered as voluntary rates for residential electricity customers and as mandatory rates for larger commercial

and industrial customers[7]. This has been done in part because of the additional cost of TOU metering and billing and the assumption that larger customers can more easily shift their loads. It should be noted that observations have seen people buy more energy as their overall bill goes down due to switching consumption to lower price periods. Under TOU rates the net effect may not be a considerable reduction in total electricity usage but customers are encouraged to decrease use when it is most valuable to do so[8]. The environmental impact associated with TOU prices is also a significant consideration. Depending on the generation and emissions profile for the region during on and off peak periods of the day, shifting consumption from on-peak to off-peak periods may provide environmental net benefits.

Rate design is one of a number of key factors that contribute to the success of energy efficiency programs because it offers opportunities to encourage customers to invest in cost-effective energy efficiency by providing the right price signals. Rate structures like the declining block rates currently used by Maritime Electric miss this behaviour influencing opportunity because it reduces savings that customers can attain from energy efficiency.

RECOMMENDATIONS

- *Eliminate the use of declining block rates for each of Maritime Electric's customer classes as it encourages increased electricity consumption rather than energy efficiency by customers.*
- *Modify rate design structures to promote cost-effective energy efficiency investments by customers. Investigate and apply the most appropriate rate form (such as time of use rates and inclining block rates) for each of Maritime Electric's customer classes which will provide appropriate price signals to customers to efficiently use electricity.*

[7] National Action Plan for Energy Efficiency (July 2006). Chapter 5
[8] Ibid