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## **BRIEFING FORM**

**SUBMITTED TO:** Environment and Sustainability Standing Committee

**DIRECTOR'S APPROVAL:** Ken Reashor, Director, Transportation and Public Works

**DATE OF MEETING:** April 26, 2011

**SUBJECT:** Amendments to the Energy-efficient Appliances Act

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### **INFORMATION REPORT**

#### **ORIGIN**

On April 21, 2011, the Honourable Charles Parker, Minister of Energy for the Province introduced an amendment to the Energy-efficient Appliances Act, which authorizes regulations restricting or prohibiting the use of a designated appliance that does not meet the prescribed efficiency standard for that appliance, in this case, roadway lights

#### **BACKGROUND**

There are approximately 140,000 street and roadway lights in Nova Scotia and approximately 10% of those light fixtures are municipally owned. HRM street lights are comprised of about 25,000 utility owned street light fixtures, and about 15,000 municipally owned fixtures. HRM has converted approximately 2400, or about 16% of its street lights to LED technology. In addition, the municipality is partnering with LED Roadway Lighting in an application to Sustainable Development Technology Canada for financial support for an additional 3500 LED street lights to be installed in 2011.

LED street lights are a very recent adaption of the LED technology. They do offer significant energy savings. The province uses a figure of approximately 50%. HRM's recent LED conversion project has a calculated energy reduction of approximately 62%. In addition, because of the anticipated 20 year LED light source life, street light maintenance could be reduced by as much as 75%.

## **DISCUSSION**

Because HRM is an owner as well as a leasee of street lights, it is necessary to understand the impacts of implementing this amendment to the Energy-efficient Appliances Act from both points of view.

**As Owner**, HRM will be required to convert all remaining street lights to compliant technology within the defined time frame, which appears to be 5 years. This direct impact would be in the order of about \$2.2 million/year for 5 years. At the end of the 5 years, annual energy savings, using today's unmetered energy rate, would be somewhere between \$500k and \$600k. Maintenance cost savings are more difficult to estimate. Present maintenance costs will be significantly impacted by rising fuel and operating costs. Extending the maintenance cycle by two or three times will help mitigate such cost pressures. However, with the much higher cost for LED fixtures, payback could be expected to be in the 10 to 15 year time frame. HRM's approach, to date has been to identify opportunities which would reduce HRM's financial contribution, which also reduces investment payback and project risk. In addition, a more cautious approach provides opportunity for the municipality to develop a better understanding of operational reliability of the technology, because there are about 2400 in operation, as well as take advantage of improved efficiencies and potential reductions in fixture cost.

**As Leasee**, HRM is required to pay through the Unmetered Rate, a cost to lease street lights, a cost to maintain those lights, and an energy cost. Based on present power bills, and depending on the wattage of the fixture, energy represents between 30% and 65% of the full charge rate. Lease rates represent between 30% and 45%. What is unclear is what the net impact of energy and maintenance cost reduction and increased fixture cost will have to the full charge rate. It will be necessary for NSPI to undertake a Cost of Service study to determine the new rates for LED street lights.

With the implementation of this legislation, HRM has been put into a situation where it is necessary to evaluate the most economical means by which street lighting service is to be provided to municipal residents. There is potential opportunity to take ownership of all street lights within HRM through a capital investment to replace existing fixtures, not in compliance with the new regulation. For example, the town of Amherst replaced all of the NSPI owned street lights with municipality owned LED street lights. The Town now maintains all street lights and only pays the utility an energy rate. Such a scenario would require HRM to purchase an additional 25,000 street lights and commit to maintaining a much more comprehensive street light system that would cover the entire municipality. Costs and benefits would need to be compared with the "Status Quo", the option which would have an ownership arrangement similar

to what now exists, with both owners replacing their own fixtures over the anticipated 5 year period. With the introduction of the legislation, there is no longer a “do nothing”, or a “look for opportunities” option.

The NS Utilities and Review Board has tentatively scheduled a General Rate Hearing for NSPI in September. Assuming that the utility will file for a rate increase this year, such a hearing will provide the utility an opportunity to introduce a rate structure for LED street lights. It will also enable customers to participate in the setting of these rates. In addition, the Department of Energy has indicated that it intends to introduce its regulations relating to the inclusion of street lights within the Energy-efficient Appliances Act in the same time frame. They intend to provide for a consultative process prior to this implementation. HRM needs to be actively engaged in both these processes to help shape the rates and regulation and to better understand a future direction for street light ownership/maintenance in the years to come for the municipality.

## **BUDGET IMPLICATIONS**

Depending on the extent of street light replacements, the enacting of this legislation will require HRM to invest between \$8 and \$35 million over the next 5 years. Replacing municipality owned lights, the low capital cost option, will result in energy and operational savings. Expanding the replacement to include NSPI owned street lights would also eliminate the lease rate, which is built into NSPI’s Full Charge rate. Until LED street light rates are set by the NSUARB and the regulations for the Energy–efficiency Appliances Act are implemented, it is not possible to fully understand the budget implications associated with the lease and own options.

## **ATTACHMENT**

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|----------------|---|
| Attachment “A” | An Act to Amend Chapter 2 of the Acts of 1991, the Energy-efficient Appliances Act                                      |
| Attachment “B” | Bill Briefing Remarks – Energy Saving Roadway Lighting(2011) Act. (An Amendment to the Energy-Efficient Appliances Act) |

## **KEY STAFF CONTACT:**

Angus Doyle  
Manager Utilities Coordination  
Transportation and Public Works

Attachment “A”

An Act to Amend Chapter 2 of the Acts of 1991, the Energy-efficient Appliances Act



# BILL NO.

*Government Bill*

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*3rd Session, 61st General Assembly  
Nova Scotia  
60 Elizabeth II, 2011*

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**An Act to Amend Chapter 2  
of the Acts of 1991,  
the Energy-efficient Appliances Act**

**PRESS COPY - check against introduction**

The Honourable Charlie Parker  
*Minister of Energy*

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*Halifax, Nova Scotia  
Printed by Authority of the Speaker of the House of Assembly*

## **Explanatory Note**

This Bill authorizes regulations restricting or prohibiting the use of a designated appliance that does not meet the prescribed efficiency standard for that appliance.

**An Act to Amend Chapter 2  
of the Acts of 1991,  
the Energy-efficient Appliances Act**

Be it enacted by the Governor and Assembly as follows:

**1** This Act may be cited as the *Energy Saving Roadway Lighting (2011) Act*.

**2** Chapter 2 of the Acts of 1991, the *Energy-efficient Appliances Act*, is amended by adding immediately after Section 3 the following Section:

3A Where the use of roadway lighting is restricted or prohibited by the regulations, no person shall use the lighting contrary to the restriction or prohibition, as the case may be, unless that lighting meets the prescribed efficiency standards with respect to that lighting.

**3** Subsection 5(1) of Chapter 2 is amended by adding immediately after clause (h) the following clause:

(ha) restricting or prohibiting the use of roadway lighting that is a designated appliance and that does not meet the prescribed efficiency standard for that appliance;

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**BILL NO.**

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**An Act to Amend Chapter 2  
of the Acts of 1991,  
the Energy-efficient Appliances Act**

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1st Reading:

2nd Reading:

C.W.H.:

3rd Reading:

The Honourable Charlie Parker  
*Minister of Energy*

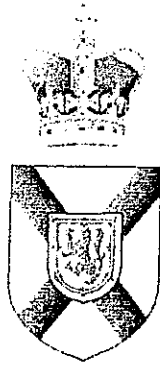
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**2011**



Attachment “B”

Bill Briefing Remarks for the Honourable Charlie Parker  
Minister of Energy



***Bill Briefing Remarks for the  
Honourable Charlie Parker  
Minister of Energy***

***Energy Saving Roadway Lighting (2011) Act  
(An Amendment to the Energy-efficient Appliances Act)***

***Nova Scotia House of Assembly Foyer  
10:15 a.m.  
April 21, 2011***

**Check Against Delivery**

Good morning everyone and thank you for being here today.

Joining me at the front of the room is Kim Himmelman, Manager of Regulatory Innovation with the Department of Energy. Kim is here to assist me in answering any technical questions you may have at the end of my remarks.

I would like to recognize our special guests here today.

Today I am pleased to be introducing the Energy Saving Roadway Lighting (2011) Act in the House of Assembly, which will amend the *Energy-efficient Appliances Act* to give government the ability to regulate the use of roadway lighting. Currently, it just regulates the purchase and sale of such lighting.

This legislative change will enable regulations to be developed that will require the use of energy efficient LED lights for all roadway lighting around the province, and set an international standard for those lights.

Premier Dexter announced our intention to introduce this legislation earlier this week in Amherst.

This will mean energy savings, reductions in greenhouse gas emissions, and less mercury in the environment.

I am proud to say that this legislation will make Nova Scotia the first jurisdiction in North America to mandate the usage of LED street lights from one end of the province to the other.

Nova Scotia is a leader in using green technology and making the change to LED road lights just makes sense.

Earlier this year, the Province announced it was converting 2,500 lights to LED lights on Nova Scotia's highways.

There are approximately 120,000 roadway lights in place throughout Nova Scotia.

The majority are owned and operated by Nova Scotia Power, while 10 per cent belong to municipalities.

We expect that converting to LED lights will result in an annual energy savings of more than 50 per cent.

When combined with significantly reduced maintenance costs, that translates into an estimated annual savings of approximately \$18 million.

In addition, converting to LED streetlights will reduce greenhouse gas emissions by more than 30,000 tons, and save a half kilogram of mercury each year.

The cost of converting to LED is estimated at approximately 100 million dollars, but the final price will be determined through a competitive bidding process.

Nova Scotia Power will apply to the Utility and Review Board to invest that capital, making the case that the conversion benefits municipal government ratepayers in that the savings offset the costs in the long-term.

Nova Scotia Power and municipalities will have five years to complete the conversion. Municipalities will have the option to finance their conversion projects through the Municipal Finance Corporation or they can choose to convert their systems through NSPI.

Some municipalities have already begun the conversion to LED lighting. Last year, seven municipalities received funding through the ecoNova Scotia fund, to begin converting their streetlights to LED lighting. And already they are seeing the savings.

For example, in Amherst, Mayor Robert Small said they expect to save approximately \$85,000 this year alone in energy and maintenance costs. And over the 20 year life span of the LED lights, they expect savings to be in excess of \$2.3 million. This is great news for the taxpayers in that municipality.

And Amherst is just one example.

Converting to LED lights on Nova Scotia roadways also has another significant benefit: It has the potential to create more jobs in Nova Scotia and grow the economy.

A Nova Scotia supplier of LED road way lighting, LED Roadway Lighting Limited of Amherst, designs and manufactures energy-efficient street lights that are virtually maintenance-free for 20 years.

LED Roadway Lighting Limited has gained a world-wide reputation for the quality of its products.

They work with governments and utilities throughout North America and currently employ more than 100 people.

They provided LED lighting products for Nova Scotia's highways, and will have the opportunity to bid on the work that will result from this legislation.

This could mean significant economic benefits to them, and more jobs for Nova Scotians.

To be clear, we will set an international standard that could also be met by other suppliers. However, we are hopeful that this Nova Scotian company will be a strong contender for the work, given their successful international track record.

In closing, I am very proud to be introducing this legislation today. It has the potential to impact the lives of Nova Scotians in many ways: By saving energy costs; by significantly reducing greenhouse gas emissions; by lowering the amount of mercury in our

environment and, potentially, by creating new jobs and growing the economy. Thank you all once again for coming today and I would be pleased to answer any questions you may have.