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REPORT

To: Mayor Darrell Mussatto and Members of Council

From: Ben Themens, Director, LEC

SUBJECT: LONSDALE ENERGY CORP. – 2016 RATE REVIEW AND BYLAW AMENDMENT

Date: July 20, 2016

RECOMMENDATION

PURSUANT to the report of the Director of Lonsdale Energy Corp., dated July 20, 2016 entitled “Lonsdale Energy Corp. – 2016 Rate Review and Bylaw Amendment”:

THAT this report and proposed “City of North Vancouver Hydronic Heat Energy Service Bylaw, 2004, No. 7575, Amendment Bylaw, 2016, No. 8497” be forwarded to LEC customers for information and comment;

AND THAT “City of North Vancouver Hydronic Heat Energy Service Bylaw, 2004, No. 7575, Amendment Bylaw, 2016, No. 8497” be considered and referred to a Public Meeting on October 3, 2016, to receive input from LEC customers and the public.

ATTACHMENTS

1. City of North Vancouver Hydronic Heat Energy Service Bylaw, 2004, No. 7575, Amendment Bylaw, 2013, No. 8497
2. Summary of LEC revenue and expenses 2004 – 2015
3. City of North Vancouver Consolidated Hydronic Heat Energy Service Bylaw, 2004, No. 7575

PURPOSE

This report provides an overview of past rate setting work and the rationale for implementing a two rate system that will provide more flexibility to customers based on annual consumption:

Rate Schedule 1 (consumption up to 300 MWh per year)

- Meter Charge \$30 per month
- Capacity Charge \$3.554 per kW
- Commodity Charge \$0.03398 per kW.h

Rate Schedule 2 (consumption over 300 MWh per year)

- Meter Charge \$161.55 per month
- Capacity Charge \$3.554 per kW
- Commodity Charge \$0.02871 per kW.h

In addition, the report includes a recommendation to revise the Late Payment Charge and Service Connection Fee. The report also compares the pricing of various Lower Mainland utilities.

BACKGROUND

The City owned district energy utility, Lonsdale Energy Corp. (LEC), has been in operation since 2004 following the enactment of Bylaw 7575, creating the energy service.

LEC currently has over 65 customers which include approximately 3,700 households or 4.3 million sq. ft. of properties including commercial and institutional premises. LEC is operating in three distinct service areas (Lower Lonsdale, Central Lonsdale and Harbourside / Marine Drive), and has 22 boilers installed in 6 Mini-Plants, with a total energy capacity exceeding 19 MW. LEC has alternative energy solutions installed with a solar array on the roof of the Library, a geo-exchange field under the School District 44 head office, as well as recovery of rejected heat from chillers where LEC supplies cooling. These sources directly offset energy that would otherwise be generated by using natural gas fired boilers. LEC has 8.3 km (trench pipe) of distribution pipe in the ground.

Historical Customer Rate Reviews

The original (2003) rate structure was initially considered too high. During the first couple of years of operations, a revision was undertaken with a customer focus group of early adopters' strata representatives. In 2007, Council adopted bylaw 7843 that significantly reduced customer costs. The new rates were applied retroactively to when each developer-built building transferred control to the building's strata corporation.

The first rate increase came in 2013 (bylaw 8321) which allowed a 5% increase in the Capacity Charge, followed by a further 5% increase to the Capacity Charge in the Summer of 2014. Two moderate rate increases in 10 years is something to be proud of considering that recent year natural gas pricing reductions have been passed along to customers. As a comparison, BC Hydro announced in 2013 that it would increase rates by 28% over 5 years as part of their 10 year plan. Good and efficient management and operation practices have helped keep costs under control. For instance, LEC constantly monitors and adjusts the performance of its system. In 2007, using the information available from 2 years of data, LEC was able to determine that buildings could be heated with less LEC equipment than originally presumed. This knowledge provided savings to LEC customers and system monitoring has been a priority for LEC since then.

Developers' Cost / Service Connection Installation Fee

The current service connection fee is \$60/kW of nominated energy capacity. The fee is structured in a way to encourage developers to build energy efficient buildings and to reduce the impact on smaller buildings connecting to the LEC. A 50% reduction is also available to building areas that are set aside for rental purposes or that have had a certificate of occupancy for more than 5 years.

This translates into a service connection fee of \$50,000 to \$100,000 per residential high-rise multi-unit building of 100 suites or more, but in most cases, it still translates into savings to the developers who do not have to spend in excess of \$100,000 for a full-service boiler room in new buildings.

DISCUSSION

Rationale for the proposed rate increase

LEC has been able to keep rate increases to a minimum. As mentioned above, initial rates set in 2004 were revised down in 2007. The first reasonable rate increase came in 2013. LEC continues to monitor system performance and has been able to defer some of its capital purchases by taking advantage of the increase in load peaking diversification that the connection of multiple buildings provides. In addition to this, LEC has taken advantage of the fact that mini-plants are inter-connected and serviced by distinct gas meters. LEC can arrange to purchase gas from different sources at each of the mini-plants and use in priority the sources that provide the best pricing opportunity.

LEC has also recently implemented an automation control system for the Lower Lonsdale Service Area. LEC intends to roll out this system into the Central Lonsdale and Harbourside / Marine Drive Service Areas next year. Once this is complete, LEC will have a more rigorous and intuitive control system in place with the ability to monitor, track and record a wide variety of data points that can be used to further improve reliability and efficiency. In the future, this may allow LEC to consider customers' actual annual energy capacity use when calculating the Capacity Charge.

While LEC is still profitable, the 2015 income (before non-recurring expenses) was only slightly higher than 2014, but significantly less than what was attained in 2009-2011 (Attachment 2). This, despite numerous new customers added to the network. Several reasons explain this:

- 1) As it is the case in every other sector, capital costs of equipment and construction have increased over the past 10 years while LEC's rates have remained relatively constant.
- 2) The significant amount of growth has prompted the hiring of additional permanent staff to help deal with the increased workload resulting from the significant number of recent new customers as well as those forecasted to be added to the network. While the addition of staff allows a reduction in the use of external service providers including Corix Utilities, LEC has been impacted by the rate of growth to the same extent as other City development related services.
- 3) LEC has started operating in a third, less dense, service area (Harbourside / Marine Drive) where several future development projects have been identified and which will, by its location, facilitate the access to energy at the future Lions Gate Secondary Waste Water Treatment Plant. The depreciation of the distribution system is over a period of 40 years and the expense is reasonable. However, some of the anticipated density will take a few years to be completed and revenue at this location will be lagging for a few years. The forthcoming connection of the Moodyville area will further extend this period of high capital spending and lagging revenue.
- 4) Since LEC's last rate review in September 2013, LEC has agreed to pay interest on City loans at a rate of 2.1% starting in December 2013. In 2015, LEC paid \$247,282 in interest to the City. Such an expense was never considered in previous rate setting processes.
- 5) LEC is increasingly diversifying its energy sources to include environmentally-friendly alternative energy. For instance, LEC is now using a geo-exchange system at the new School District office building. LEC has also been using solar energy since 2009 in its system. LEC has recently completed the installation of a cooling plant (MP-5) at the Shipyards site. The rejected heat from the chillers is captured and injected into the heating network. This directly offsets energy that would otherwise be generated using LEC's high efficiency natural gas condensing boilers. These sources are more expensive to procure and use, when compared to conventional or business-as-usual natural gas boiler technology. The project financial payback is further negatively impacted by current low natural gas prices. LEC still intends to introduce low carbon technology to its system, and continues to investigate new and innovative energy sources. In this regard, there are a few projects that have potential to be implemented in the next 2-5 years.
- 6) LEC has used several senior government grants and contributions to fund some of its equipment and network. LEC will continue to apply for funding whenever it identifies an opportunity to access such funding, particularly to fund alternative technologies. However, it is important to note that so far, LEC has fully funded, from its revenue, the cost of alternative energy generation equipment including the new shipyard cooling system.

In recognition of the fact that some of the above issues are deemed to be temporary, LEC is not suggesting to recover the full cost of the above increases through an immediate rate increase. However, LEC recommends that the following changes be made to its rate structure.

Meter Charge

Currently, every customer is charged \$150 per month for the reading and invoicing of a primary meter, regardless of their energy capacity or consumption. Other energy providers such as FortisBC, give smaller buildings the opportunity of purchasing energy under Rate 2, with a smaller meter charge and an increased commodity charge. The below table compares FortisBC's Rate 2 and Rate 3:

FORTIS BC RATE COMPARISON		
	RATE 2	RATE 3
	Small	Large
	Commercial	Commercial
	Up to 2,000	Over 2,000
	GJ/year	GJ/year
	<hr/>	<hr/>
Fixed Daily Charge (per month)	\$24.82	\$132.43
Variable Price per GJ		
Delivery	\$3.331	\$2.809
Storage & Transport	\$0.934	\$0.775
Cost of Gas	<u>\$1.141</u>	<u>\$1.141</u>
TOTAL PER GJ:	<u>\$5.406</u>	<u>\$4.725</u>

The issue of high meter charges has been raised by one of LEC's smaller customers, where their meter charge comprises nearly 22% of their annual cost, compared to an average building where it is approximately 4%.

In recognition of the fact that LEC is increasingly connecting smaller buildings that are being penalized by high meter charges, LEC proposes the introduction of two rates:

- **Rate Schedule 1** - for average annual consumption of less than 300 MWh
- **Rate Schedule 2** - for average annual consumption of more than 300 MWh

For Rate Schedule 1, LEC is proposing to offer a reduced Meter Charge of \$30 per month, which is an 80% reduction on the current rate. This being said, the reduction of the Meter Charge for those buildings will be matched with an increase of the Commodity Charge. This will be discussed and outlined in the Commodity Charge section below.

For Rate Schedule 2, LEC is proposing to increase the Meter Charge by 7.7% to \$161.55 per month. The increase is based on an annual increase of 2.5% per year since the last rate review in mid-2013.

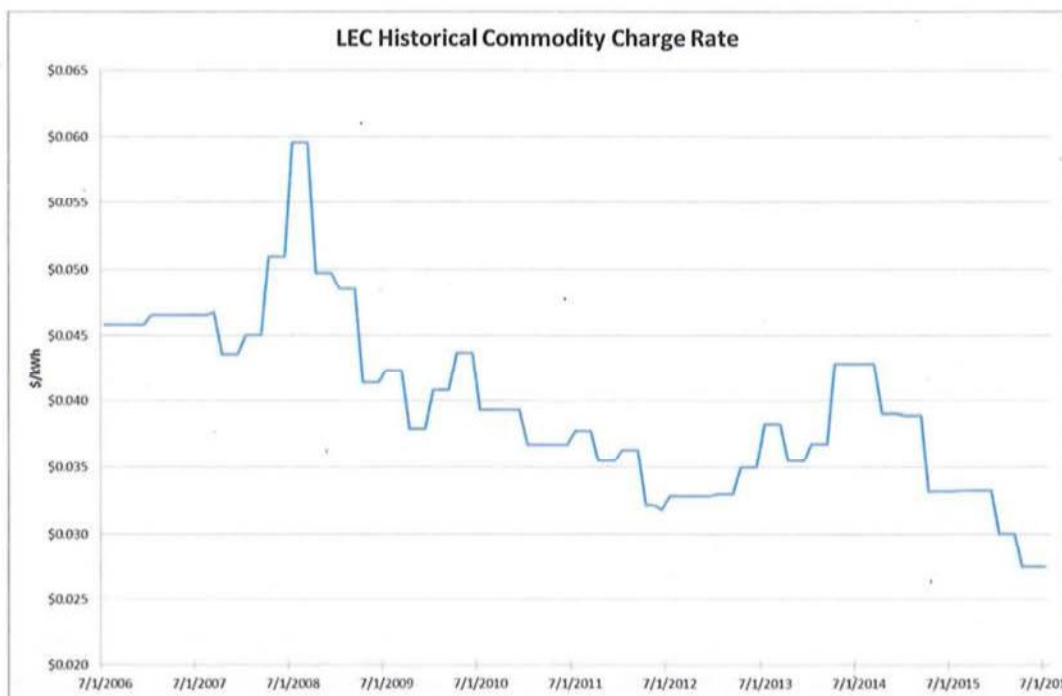
The goal is for the proposed Meter Charge to, on average, account for 3% of the annual total cost of customer billing. With the exception of two meter charge decreases, this is the first change to the meter charge since LEC started operations in 2003.

Capacity Charge

LEC recommends that the current Capacity Charge be increased by 10% for Rate Schedule 1 and Rate Schedule 2 from its current level of \$3.231 / kW to \$3.554 / kW. This will help with the issues mentioned in the above list. Furthermore, it will allow LEC to start to build a reserve in order to fund and implement low-carbon technology and/or allow for the reimbursement of City loans.

Commodity Charge

Currently, the commodity charge is adjusted to reflect the cost of purchasing 1,000 GJ of natural gas on FortisBC's Rate 3. Historical LEC Commodity Charge rates are provided in the chart below.



As can be expected with the current gas prices at \$0.02747 per kWh, the current Commodity Charge is at an historic low. LEC has its plants on varying tariffs to take advantage of gas pricing alternatives and to minimize fixed costs. However, the current historically low natural gas commodity price has substantially reduced the margin required to cover fixed costs associated with LEC's fixed natural gas purchasing costs.

As mentioned above in the Meter Charge section, LEC is attempting to remedy the relatively high proportion the Meter Charge represents to smaller customers. FortisBC offers different rates which are optimized for different levels of energy consumption, the Rate 2 – Small Commercial and Rate 3 – Large Commercial. As can be seen in the table on page 5, Rate 2 has a much lower monthly charge, and a moderately higher variable price of natural gas consumed when compared to Rate 3.

For LEC's Rate Schedule 1, LEC is recommending an increase to its Commodity Charge of 23.7%. This higher rate will be offset by the reduced monthly Meter Charge, as discussed above.

For Rate Schedule 2, LEC is recommending an increase to its Commodity Charge of 4.5%.

To be clear, the proposed rate structure would result into the following:

Charge	Description	Current Rates	Proposed Bylaw		% Change
Meter Charge	Monthly charge for each Service Connection serving the Premises	\$150 / month	\$30 / month	RATE 1 Up to 300,000 kWh / yr	-80.0%
			\$161.55 / month	RATE 2 Over 300,000 kWh / yr	7.7%
Capacity Charge	Monthly charge per kilowatt multiplied by the energy capacity of the Premises in kilowatts.	\$3.231 / kW	\$3.5541 / kW	RATE 1 & RATE 2	10.0%
Commodity Charge	Charge per kilowatt hour of Hydronic Energy provided to the Premises.	\$0.02747 / kW.h *	\$0.03398 / kW.h	RATE 1 Up to 300,000 kWh / yr	23.7%
			\$0.02871 / kW.h	RATE 2 Over 300,000 kWh / yr	4.5%

* Commodity Charge as of April 1, 2016 is adjusted to follow FortisBC gas price fluctuation

Based on these recommended changes to LEC's rate structure, LEC would see a forecasted increase to its annual revenue of 7.0%, or \$164,776. Furthermore, seven of LEC's smaller customers would realize a net reduction to their annual cost of up to 12.6%. Staff believes that this strikes the correct balance between having fair rates and small customers not being overburdened by high fixed costs. Based on actual customer consumptions from May 2015 through April 2016, there are 18 customers that consumed less than 300 MWh, and would therefore benefit from the Rate Schedule 1 that LEC is proposing. These customers would realize an average annual savings of \$757 compared to if they were on the Rate Schedule 2.

SUMMARY OF ANNUAL CURRENT AND PROPOSED RATES						
	kWh	Meter Charge	Capacity Charge	Commodity Charge	Total	\$/ kWh
May 15 - April 16 Actuals (with Current Commodity Charge)	32,304,958	\$96,000 4.1%	\$1,357,606 57.9%	\$892,734 38.0%	\$2,346,341 100.0%	\$0.07263
Proposed Increase	32,304,958	\$75,051 3.0%	\$1,493,367 59.5%	\$942,699 37.5%	\$2,511,117 100.0%	\$0.07773
Difference	0	-\$20,949	\$135,761	\$49,964	\$164,776	
% Change		-21.8%	10.0%	5.6%	7.0%	

Review of Rate Schedule 1 and Rate Schedule 2 Classifications

Rate Schedule 1 and Rate Schedule 2 have been set considering consumption over a period of 12 months. Customers will be annually classified for Rate Schedule 1 or Rate

Schedule 2 billing by LEC on November 1st on the basis of their energy consumption over the previous 12 months ending September 30th. Customers may apply for a change in classification prior to November 1st if they wish to be on another Rate Schedule. LEC will not retroactively bill / refund any differences between Rate Schedule 1 and Rate Schedule 2 charges. Once a Rate Schedule class is assigned on November 1st, it will remain in place for a period of 12 months.

Late Payment Charge

LEC's current late payment fee is set at Scotiabank Prime Rate + 2%. The current Scotiabank Prime Rate is 2.7%, which brings LEC's Late Payment Charge to 4.7% per year. Other utilities, such as FortisBC, BC Hydro and River District Energy charge 1.5% per month, or 19.5% per annum. LEC recommends that the Late Payment Fee be adjusted to 1.5% per month. This would align the fee with other utilities and encourage customers to pay by the payment deadline.

Service Connection Fee

The current Service Connection Fee is \$60 per kilowatt of nominated energy capacity. This fee is meant to help cover the cost of installing the Energy Transfer Station at the customer premises. It is paid by the developer or by the building owner in the case of non-strata buildings. LEC has been experiencing increased costs for installing Energy Transfer Stations, despite staff best efforts to reduce costs by obtaining competitive bids from contractors and heat exchanger suppliers as well as buying heat exchangers directly from suppliers to save on contractors' mark-up. A current market rate for installing a typical Energy Transfer Station would be in the \$90/kW range. This being said, the purpose of the Service Connection Fee is two-fold:

- 1) By basing the fee on the capacity requirement of the building, encourage building efficiency enhancements during building design; and
- 2) Recover an amount somewhat equivalent to the cost saving provided to developers and builders who do not have to provide an in-building boiler when connecting to LEC.

LEC is recommending a 25% increase of the Service Connection Fee to an amount of \$75 per kilowatt of nominated capacity. This increase considers the following factors:

- 1) LEC's Service Connection Fee has seen no adjustment since 2008;
- 2) since then, the cost of construction of heat exchangers and in-building boilers have increased significantly; and
- 3) recent building code improvements have enhanced building efficiencies which has diminished buildings' nominated capacity and the corresponding Service Connection Fee.

Secondary Meter Reading Fee

For customers equipped with more than one meter, the proposed bylaw includes a monthly fee increase to \$30 per meter per month to cover the cost of monthly meter reading/invoicing services for meters that are paid in full and maintained by customers. This service is currently priced at \$25 per meter per month.

Cost of Service – LEC's Competitiveness

The following table provides a comparison of the cost of service of other Lower Mainland district energy providers as well as the equivalent cost of natural gas or electricity used for heating purposes.

Table - Comparison of LEC rate with other providers

Energy Provider	Type of Service	Year of rate	Rate (\$ / MW.hr)	Difference with LEC
LEC	Hot Water	2015	\$80.60	-
BC Hydro	Electricity	2016	\$109	35%
Fortis BC	Stand-alone NG Boiler	2015	\$88	9%
River District Energy (East Fraserlands)	Hot Water	2016	\$108	34%
South East False Creek (SEFC)	Hot Water	2016	\$103	28%
SFU UniverCity Energy	Hot Water	2016	\$150	86%
Richmond Oval Village District Energy	Hot Water	2016	\$86	7%
Surrey City Energy	Hot Water	2015	\$105	30%

Notes:

LEC cost based on 2015 revenue and heat deliveries.

BC Hydro cost based on purchase of 50% residential step 1 and 50% residential step 2 electricity price as of April 1, 2016 and a 5% rate rider. Based on the same assumptions, the 2017 electric cost would be \$113 / MW.hr. (3.5% increase)

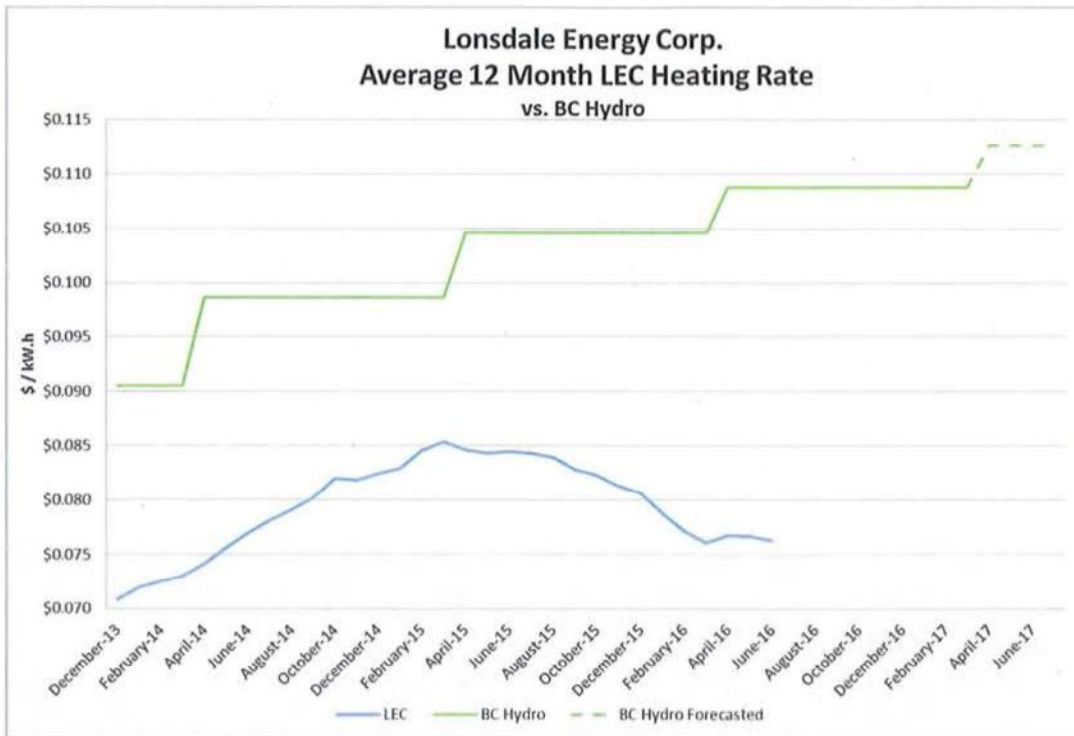
Cost of Fortis BC, River District Energy, SEFC, SFU UniverCity, Richmond Oval and Surrey City Energy taken from City of Vancouver report dated November 12, 2015.

Creative Energy Ltd. and UBC have been omitted due to the fact that their systems are steam based.

In 2015, LEC delivered 32,088,581 kWh of heat and invoiced \$2,586,285.28. This translates into an average energy cost of \$80.60 / MWh in 2015 for LEC. As per the above table, LEC is the most competitive, hot water based, district energy provider in the Lower Mainland. This is a fact that LEC is proud of, and one which validates the management and philosophy of LEC. For users, LEC rates are significantly more economical than using baseboard electric heat.

Considering recent low natural gas prices, assuming a fixed natural gas cost and the same energy consumption for customers on the LEC network between May 2015 and April 2016, the proposed net increase would result in an average energy cost of \$77.73 / MWh, which is still much lower than the cost of other alternatives. Furthermore, the average cost after the proposed rate increases is still lower than the average LEC cost of energy for 2015.

To provide some historical context, the following chart compares LEC's average annual rate with that of BC Hydro assuming 50% step 1 and 50% step 2 residential rates and a 5% rate rider.



In 2003, when LEC was first created, it was envisioned that the utility would aim at providing heat at a rate that would not exceed the cost of electricity by more than 15%. Electric baseboard heating is one of the cheapest alternatives in terms of construction costs and is often preferred by developers. The cost of electricity being estimated at \$109 / MW.hr, a 15% target would translate into rates averaging \$125.35 / MW.hr for LEC.

While LEC is certainly not contemplating to raise its rates by such an extent, the amount is significant and demonstrates that LEC has some latitude to provide a return to CNV or to finance and implement carbon neutral technologies. LEC endeavors to have rates that are fair to both LEC users as well as City residents, as CNV invested in LEC and is funding some of the initial system costs. LEC is also constantly reviewing the implementation of greener technologies and is targeting further diversifying its heat sources while maintaining rate increases at a reasonable level.

Customer Input

LEC will inform customers of the proposed rate increase by letter inviting them to attend the October 3, 2016 Public Meeting. LEC will also include information on its website.

Financial Modeling

The current rate structure seems sufficiently fair, reasonable and accurate to support adjusting the Meter, Capacity and Commodity Charges as recommended, assuming that LEC continues providing heating service predominantly using natural gas boiler technology.

The recommendation to increase the above noted rates is based on past performance, a stagnation of LEC's net income as well as the fact that the current rate structure is significantly lower than any other alternatives. LEC needs to generate more revenue to

reimburse outstanding amounts to CNV and/or have the option to implement alternative energy sources.

In the immediate, staff suggests that planning and decision-making be based on comparing alternatives and opportunities with the business-as-usual scenario that considers current rates and heat generation using natural gas boiler technology.

At this time, given the uncertainty concerning the future rate of real estate development in the city as well as the rate of implementation and cost of alternative energy generation technology, staff believes that it would be futile to try to generate a 20-year model. LEC intends to provide a business plan that will consider potential significant alternative energy sources in the coming months and assess their impact on the financial planning of the organization. The need and benefit of building a long-term financial model will be assessed at that time.

SUMMARY

LEC has always conveyed the message that it aims to be cost neutral to both system users and city residents, and to achieve an appropriate balance of environmental, social and economically sustainable benefits to the City. Since the start of its operations, LEC has tried to compare its rates with those of BC Hydro to ensure that the amount paid by its customers would not exceed the cost of using electric baseboard by more than 15%. Similarly, one could consider that if rates were significantly lower than the cost of using electric baseboards, LEC customers would be benefiting at the expense of the community. The income generated by LEC should be used to provide CNV with a return on investment and/or to further diversify LEC's heating sources to include alternative energy which will benefit the whole community.

On that basis and considering the fact that LEC continues to successfully implement alternative energy sources, LEC staff considers that the proposed rate increase is fair and reasonable to both LEC customers and CNV residents.


FINANCIAL IMPLICATIONS

The financial implications are addressed throughout the report.

STRATEGIC PLAN IMPLICATIONS

The district energy system implemented by LEC is consistent with the goals of the City Strategic Plan concerning the enhancement of the natural and built environment and the City Official Community Plan.

RESPECTFULLY SUBMITTED BY:



Ben Themens, MBA, P.Eng., CGA

Director, LEC

THE CORPORATION OF THE CITY OF NORTH VANCOUVER

BYLAW NO. 8497

**A Bylaw to amend the City of North Vancouver
“Hydronic Energy Service Bylaw, 2004, No. 7575”**

The Council of The Corporation of the City of North Vancouver, in open meeting assembled, enacts as follows:

1. This Bylaw shall be known and cited for all purposes as **“City of North Vancouver Hydronic Energy Service Bylaw, 2004, No. 7575, Amendment Bylaw, 2016, No. 8497”**.

2. Adding to Section 4.2 Rate Selection in Schedule “B” the following paragraph:

“In the absence of instructions from the Customer, the Service Provider will select a Rate Schedule on behalf of the Customer on the basis of information available at the time of selection. If the Customer wishes to be on a specific Rate Schedule, then the Customer must inform the Service Provider in writing prior to November 1 of their Rate Schedule selection. The selected Rate Schedule will remain in effect for one (1) year, starting November 1.”

3. The “Standard Fees and Charges Schedules” attached to “Hydronic Energy Service Bylaw, 2004, No. 7575” is amended by deleting from the section headed “Service Connection Fee” the words “\$60 per kilowatt” and replacing them with the words “\$75 per kilowatt”. The “Service Connection Fee” is further amended by adding to the description as follows:

“This charge will be assessed on the basis of the fee in place as of the date of the Service Agreement.”

4. Effective November 1, 2016, the “Standard Fees and Charges Schedules” attached to “Hydronic Energy Service Bylaw, 2004, No. 7575” is amended by deleting from the section headed “Meter Reading and Invoicing Fee” the words “\$25 per month” and replacing them with the words “\$30 per month”.

5. The “Standard Fees and Charges Schedules” attached to “Hydronic Energy Service Bylaw, 2004, No. 7575” is amended by deleting the words under the section headed “Late Payment Charge” and replacing them with the following:

“The late payment charge is to be 1.5% per month (19.56% per annum). The charge is to be calculated from the date that the invoiced amount was due until payment is received.”

6. Effective November 1, 2016, "Hydronic Energy Service Bylaw, 2004, No. 7575" is amended by deleting Schedule "C" and replacing it with the Schedule "C" attached to this bylaw.

READ a first time by the Council on the <> day of <>, 2016.

READ a second time by the Council on the <> day of <>, 2016.

READ a third time and passed by the Council on the <> day of <>, 2016.

ADOPTED by the Council, signed by the Mayor and City Clerk and affixed with the Corporate Seal on the <> day of <>, 2016.

MAYOR

CITY CLERK

SCHEDULE "C"

FEES, RATES AND CHARGES

The rates, fees and charges payable in respect of the Service defined in Bylaws 7575 are as set out below.

Except as otherwise stated, capitalized terms in this Schedule "C" shall have the meaning defined in the General Terms and Conditions Bylaw 7575 attached as Schedule "B".

Provision of Heating to Premises:

The rates payable for the provision of Hydronic Energy Heating Service to Premises are a combination of the meter charge, capacity charge and commodity charge.

RESIDENTIAL SERVICE

RATE SCHEDULE 1

- (a) **Meter Charge** – A monthly charge of \$30.00 for each Service Connection serving the Premises.
- (b) **Capacity Charge** – A monthly charge of \$3.5541 per kilowatt multiplied by the energy capacity of the Premises, as determined by a professional engineer qualified for such purposes and described in kilowatts.
- (c) **Commodity Charge** – A charge per kilowatt hour of Hydronic Energy provided to the Premises calculated by multiplying \$0.03398 by the percentage increase or decrease in the price of 1,000 GJ/month under FortisBC rate schedule 3 from the price established as of July 1, 2016.

RATE SCHEDULE 2

- (a) **Meter Charge** – A monthly charge of \$161.55 for each Service Connection serving the Premises.
- (b) **Capacity Charge** – A monthly charge of \$3.5541 per kilowatt multiplied by the energy capacity of the Premises, as determined by a professional engineer qualified for such purposes and described in kilowatts.
- (c) **Commodity Charge** – A charge per kilowatt hour of Hydronic Energy provided to the Premises calculated by multiplying \$0.02871 by the percentage increase or decrease in the price of 1,000 GJ/month under FortisBC rate schedule 3 from the price established as of July 1, 2016.

COMMERCIAL SERVICE

RATE SCHEDULE 1

- (a) **Meter Charge** – A monthly charge of \$30.00 for each Service Connection serving the Premises.
- (b) **Capacity Charge** – A monthly charge of \$3.5541 per kilowatt multiplied by the energy capacity of the Premises, as determined by a professional engineer qualified for such purposes and described in kilowatts.
- (c) **Commodity Charge** – A charge per kilowatt hour of Hydronic Energy provided to the Premises calculated by multiplying \$0.03398 by the percentage increase or decrease in the price of 1,000 GJ/month under FortisBC rate schedule 3 from the price established as of July 1, 2016.

RATE SCHEDULE 2

- (a) **Meter Charge** – A monthly charge of \$161.55 for each Service Connection serving the Premises.
- (b) **Capacity Charge** – A monthly charge of \$3.5541 per kilowatt multiplied by the energy capacity of the Premises, as determined by a professional engineer qualified for such purposes and described in kilowatts.
- (c) **Commodity Charge** – A charge per kilowatt hour of Hydronic Energy provided to the Premises calculated by multiplying \$0.02871 by the percentage increase or decrease in the price of 1,000 GJ/month under FortisBC rate schedule 3 from the price established as of July 1, 2016.

Provision of Cooling to Premises:

The rates payable for the provision of Hydronic Energy Cooling Service to Premises shall be determined by Council for each Premises which connects to and uses the Hydronic Energy Cooling Service

In addition to the foregoing rates the fees and charges set out in the Standard Fees and Charges attached as a schedule to the General Terms and Conditions will apply to the provision of the Service.

Historical Data for 2004 -2015 Years of Operations

Income Statement line description	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Revenue	\$ 176,707	\$ 409,108	\$ 415,741	\$ 630,088	\$ 1,016,118	\$ 1,158,110	\$ 1,434,108	\$ 1,562,007	\$ 1,693,413	\$ 2,038,134	\$ 2,594,229	\$ 2,647,001
Cost of Sales	\$ 56,777	\$ 187,089	\$ 245,839	\$ 299,299	\$ 479,519	\$ 469,707	\$ 722,351	\$ 752,254	\$ 747,330	\$ 965,876	\$ 1,261,027	\$ 1,175,841
Gross profit	\$ 109,930	\$ 222,019	\$ 169,902	\$ 330,789	\$ 536,599	\$ 688,403	\$ 711,757	\$ 809,753	\$ 946,083	\$ 1,072,258	\$ 1,333,202	\$ 1,471,160
Plant Operation and Maintenance	\$ 19,087	\$ 91,585	\$ 95,244	\$ 98,149	\$ 114,689	\$ 138,289	\$ 143,305	\$ 191,350	\$ 212,842	\$ 289,346	\$ 310,795	\$ 289,127
Depreciation	\$ 58,531	\$ 114,823	\$ 127,777	\$ 146,220	\$ 212,246	\$ 253,444	\$ 273,586	\$ 309,667	\$ 430,542	\$ 554,686	\$ 693,517	\$ 795,568
General and Administrative	\$ 98,268	\$ 145,543	\$ 172,968	\$ 140,987	\$ 173,957	\$ 146,916	\$ 185,574	\$ 188,783	\$ 309,926	\$ 445,511	\$ 361,409	\$ 348,892
Total - Operating Expenses	\$ 185,886	\$ 351,951	\$ 395,989	\$ 385,356	\$ 500,892	\$ 578,649	\$ 602,465	\$ 689,800	\$ 953,310	\$ 1,299,543	\$ 1,365,721	\$ 1,433,587
Income (loss) before other expenses	\$ (75,956)	\$ (129,932)	\$ (226,087)	\$ (54,567)	\$ 35,707	\$ 109,754	\$ 109,292	\$ 119,953	\$ (7,227)	\$ (227,285)	\$ (32,519)	\$ 37,573
Contributions	\$ 60,136	\$ 259,458	\$ 38,804	\$ 38,804	\$ 63,416	\$ 117,389	\$ 120,875	\$ 146,532	\$ 174,480	\$ 211,010	\$ 225,615	\$ 232,648
Finance income	\$ 23,432	\$ 22,037	\$ 24,530	\$ 17,321	\$ 5,111	\$ 11,171	\$ 15,742	\$ 25,121	\$ 32,071	\$ 34,429	\$ 27,172	\$ 27,172
Finance costs	\$ (111,951)	\$ (207,481)	\$ (194,850)	\$ (34,141)	\$ (123,277)	\$ (125,421)	\$ (128,876)	\$ (131,322)	\$ (139,585)	\$ (157,986)	\$ (214,870)	\$ (253,282)
Subtotal	\$ (111,951)	\$ (123,913)	\$ 86,645	\$ 29,193	\$ (42,540)	\$ (2,921)	\$ 3,170	\$ 30,952	\$ 60,016	\$ 85,095	\$ 45,174	\$ 6,538
Income before non-recurring expenses	\$ (187,907)	\$ (253,845)	\$ (139,442)	\$ (25,374)	\$ (6,833)	\$ 106,833	\$ 112,462	\$ 150,905	\$ 52,789	\$ (142,190)	\$ 12,655	\$ 44,111
Non-recurring expenses												\$ (1,030,721)
Net Income and Comprehensive Income	\$ (187,907)	\$ (253,845)	\$ (139,442)	\$ (25,374)	\$ (6,833)	\$ 106,833	\$ 112,462	\$ 150,905	\$ 52,789	\$ (142,190)	\$ 12,655	\$ (986,610)
Total Net Accumulated Surplus (loss)	\$ (277,787)	\$ (531,632)	\$ (671,074)	\$ (696,446)	\$ (703,281)	\$ (556,449)	\$ (483,987)	\$ (333,982)	\$ (280,293)	\$ (472,463)	\$ (409,828)	\$ (1,396,438)
Sales (kW/hr)	1,175,900	3,630,109	4,981,300	6,828,400	11,063,030	14,120,569	18,737,975	22,847,087	23,945,719	27,921,503	31,254,231	32,401,971

Attachment No. **2**

Attachment #3

City of North Vancouver Hydronic Energy Service Bylaw, 2004, No. 7575

The Bylaw can be viewed at:

<http://www.cnv.org/-/media/city-of-north-vancouver/documents/bylaws/7/5/7575-c.pdf>

or on the LEC website, under “How Rates Are Calculated”

<http://www.cnv.org/city-services/lonsdale-energy/about-lec-rates>