City of Richmond

Report to Committee

To:	Public Works and Transportation Committee	**Date:**	September 26, 2016
From:	John Irving, P.Eng. MPA Director, Engineering	**File:**	10-6125-01/2016-Vol 01
Re:	**Oval Village District Energy Utility Bylaw No. 9134, Amendment Bylaw No. 9622**		

Staff Recommendation

That the Oval Village District Energy Utility Bylaw No. 9134, Amendment Bylaw No. 9622 be introduced and given first, second and third readings.

John Irving, P.Eng. MPA
Director, Engineering
(604-276-4140)

REPORT CONCURRENCE		
ROUTED TO:	**CONCURRENCE**	**CONCURRENCE OF GENERAL MANAGER**
Finance Department	☑	
Law	☑	
REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE	**INITIALS:** DW	**APPROVED BY CAO**

Staff Report

Origin

In 2014, Council adopted the Oval Village District Energy Utility Bylaw No. 9134 (Bylaw) establishing governing regulations and the rate for the delivery of energy for space and domestic hot water heating within the Oval Village District Energy Utility (OVDEU) service area.

The purpose of this report is to recommend 2017 OVDEU service rates.

This report supports Council's 2014-2018 Term Goal #4 Leadership in Sustainability:

Continue advancement of the City's sustainability framework and initiatives to improve the short and long term livability of our City, and that maintain Richmond's position as a leader in sustainable programs, practices and innovations.

4.1. Continued implementation of the sustainability framework.

4.2. Innovative projects and initiatives to advance sustainability.

Background

In 2013, under Council direction, the Lulu Island Energy Company (LIEC) was established as a wholly-owned corporation of the City for the purposes of managing district energy utilities on the City's behalf. The District Energy Utilities Agreement between the City and LIEC was executed in 2014, assigning LIEC the function of providing district energy services on behalf of the City.

The OVDEU service area and the associated operations, assets and liabilities are administered by LIEC. All capital and operating costs are recovered through revenues from user fees, ensuring that the business is cost neutral over time for the City of Richmond's residents. In 2014, in order to accomplish these goals, LIEC and Corix Utilities entered into a design-build-finance-operate-maintain concession agreement. The City is the sole shareholder of LIEC and Council sets the rates to customers.

Currently, there are four buildings (Carrera, Riva 1, Riva 2 and River Park Place-Phase 1) connected to the OVDEU and two more (Cadence and Tempo) will be added in the next three months (see Attachment 2). At the end of 2016, over 1300 residential units will be receiving energy from the OVDEU. Energy is currently supplied from the two interim energy centres with natural gas boilers which combined provide 11 MW of heating capacity. When enough buildings are connected to the system to justify the cost, a permanent energy centre will be built which will produce low carbon energy, currently planned to be harnessed from the Gilbert Trunk sanitary force main sewer. Over the project's lifetime, the OVDEU system is anticipated to reduce the GHG emissions by more than 52,000 tonnes of CO2 as compared to business as usual.

Analysis

Proposed 2017 OVDEU Rates

The 2016 OVDEU rate is comprised of:

1. A Capacity Charge (Fixed) - monthly charge of $0.0476 per square foot of the building gross floor area; and

2. A Volumetric Charge (Variable) - charge of $29.328 per megawatt hour of energy returned from the Heat Exchanger and Meter Set at the Designated Property.

Factors that were considered when developing the 2017 OVDEU rate options are:

- **Competitive Rate:** The rate should provide end users with annual energy costs that are competitive with conventional system energy costs, based on the same level of service.

- **Cost Recovery:** The OVDEU was established on the basis that all capital and operating costs would ultimately be recovered through revenues from user fees. The financial model included recovery of the capital investment over time and built in a rate increase year over year for fuel cost increases, inflation, etc. in order to ensure the financial viability of the system.

- **Financial Obligations from LIEC to Corix:** The OVDEU business was established based on the concept that all capital and operating costs would be recovered through revenues from user fees, ensuring that the business would be cost neutral over time. In order to fulfill these requirements, LIEC executed a concession agreement with Corix Utilities to design, construct, finance, operate and maintain the OVDEU. Under this agreement, Corix is entitled to recover from LIEC any costs and expenses that are incurred in accordance with prudent utility practice.

- **Forecasted Utility Costs:** Utility cost (electricity and natural gas) increases are outside the City's control. Nonetheless, these commodity costs directly impact the operation cost of the OVDEU. BC Hydro's 10 year plan projects an electricity rate increase of 3.5% in 2017. On September 12, 2016, Fortis BC announced that the BC Utilities Commission approved increase of natural gas rates; beginning October 1, 2016 natural gas rates will increase by approximately 11.9 % for a typical residential customer in Lower Mainland.

- **Consumer and Municipal Price Indexes:** Other factors to consider include various price indexes. For example, the consumer price index (CPI) is estimated by the Finance Department at 2.1% based on the The Conference Board of Canada Metropolitan Outlook 1 Spring 2016, while municipal price index (MPI) is estimated at 2.7%.

Taking into consideration the above factors, three options are presented here for consideration:

Option 1 – No increase to the OVDEU rate for services (Not recommended)

Under the "status quo" option, the rate would not change from the 2016 rate.

The OVDEU is in its early days of operation, and as a result the utility (electricity and natural gas), operation and maintenance costs are still largely based on projections of the original financial model. Variation from the model will affect the long term performance of the OVDEU. For example, the revenue may vary from the projected revenue in the financial model depending on the speed of development and occupancy. The financial model of the OVDEU has taken into consideration modest rate increases similar to projected increase rates for conventional energy. A status quo approach would have a negative impact on the financial performance of the OVDEU and could affect LIEC's business model.

Option 2 – 2% increase to OVDEU rate for services (Not recommended)

A 2% increase would only partially recover the estimated utility (electricity and natural gas), operation and maintenance cost increases. At this stage, the OVDEU relies on natural gas to provide energy services to customers and therefore natural gas cost takes a portion of OVDEU expenses.

Besides utility, operation and maintenance costs, the OVDEU rate also recovers capital and capital related costs. This rate increase is below the projected increase used in the OVDEU financial model. Hence, an increase of only 2% would have a negative impact on the financial performance of the OVDEU and could affect LIEC's business model.

Option 3 – 4% increase to OVDEU rate for services (Recommended)

The proposed 4% rate increase under this option follows the OVDEU financial model and is below the estimated business as usual (BAU) rate increase (around 7%[1]) that the customers would pay for the energy from the conventional utility system.

Corix Utilities, LIEC's partner for the OVDEU project, confirmed that the natural gas cost increase is manageable with the above recommended rate adjustment. This is due to the fact that the fuel costs portion (natural gas and electricity) in the breakdown of the cost of service that LIEC is being charged by Corix based on Concession Agreement is relatively small comparing to the related capital recovery and the other operating costs.

The OVDEU financial model and LIEC business model follows the principle of full cost recovery. To mitigate potential financial risks, it is recommended that the City follow the financial model as much as possible in the early years of the utility operation and annually adjust the rates as per the model. As the utility collects more actual data about the connected buildings'

[1] Blended increase based on 3.5% increase of electricity cost and 11.9% increase of natural gas cost. The BAU scenario assumes that 40% of the building heating load would be provided from electricity and the remaining 60% would be from gas make-up air units. Non-fuel BAU costs are assumed to be 25% of total costs and that they increase by CPI.

updated and the annual rate adjustment may follow closer year to year financial indicators, to ensure that the business is sustainable, economically viable and beneficial for LIEC and its customers.

The above options are displayed in Table 1 below.

Table 1: Proposed Rates for Services

	2016	2017		
	Current	Option 1 0% Increase	Option 2 2% Increase	Option 3 4% Increase (Recommended)
Capacity Charge - monthly charge per square foot of the building gross floor area	$0.0476	$0.0476	$0.0486	$0.0495
Volumetric Charge - charge per megawatt hour of energy consumed by the building	$29.328	$29.328	$29.915	$30.501

LIEC is a service provider appointed by Council to provide energy services to OVDEU customers on behalf of the City. City Council is the regulator and the rate setting body for the OVDEU service area. In accordance with this structure, LIEC staff have prepared the above rate analysis, and LIEC's Board of Directors has reviewed and approved the recommended 2017 OVDEU rate for services.

Financial Impact

None. The 4% rate increase will result in the revenue increase which will offset the operating and capital costs following the principle of full cost recovery as modeled in the OVDEU financial model.

Conclusion

The recommended 4% increase (Option 3) for the 2017 OVDEU service rate supports Council's objective to keep the annual energy costs for OVDEU customers competitive with conventional energy costs, based on the same level of service. As a comparison to conventional system energy costs, the proposed 4% rate increase is below the combined estimated rate increase of 7% by BC Hydro and Fortis.

At the same time, the proposed rate ensures cost recovery of the capital and operating costs, and that the OVDEU business is cost neutral over time for City of Richmond residents. Staff will continuously monitor energy costs and review the rate to ensure rate fairness for the consumers and cost recovery for the City.

Doru Lazar
Senior Project Manager
(604-204-8695)
JI:dl

Alen Postolka, P.Eng., CP, CEM
District Energy Manager
(604-276-4283)

Att. 1: Oval Village District Energy Utility Bylaw No. 9134, Amendment Bylaw No.9622
Att. 2: Oval Village District Energy Utility Map (as of Sept 2016)

City of Richmond

Bylaw 9622

Oval Village District Energy Utility Bylaw No. 9134 Amendment Bylaw No. 9622

The Council of the City of Richmond enacts as follows:

1. The **Oval Village District Energy Utility Bylaw No. 9134** is amended by deleting **Schedule D (Rates and Charges)** of the Bylaw in its entirety and replacing it with a new Schedule D as attached as Schedule A to this Amendment Bylaw.

2. This Bylaw is cited as **"Oval Village District Energy Utility Bylaw No. 9134".**

FIRST READING	
SECOND READING	
THIRD READING	
ADOPTED	

CITY OF RICHMOND
APPROVED for content by originating dept.
APPROVED for legality by Solicitor

MAYOR

CORPORATE OFFICER

Schedule A to Amendment Bylaw No. 9622

SCHEDULE D

Rates and Charges

PART 1 - RATES FOR SERVICES

The following charges, as amended from time to time, will constitute the Rates for Services:

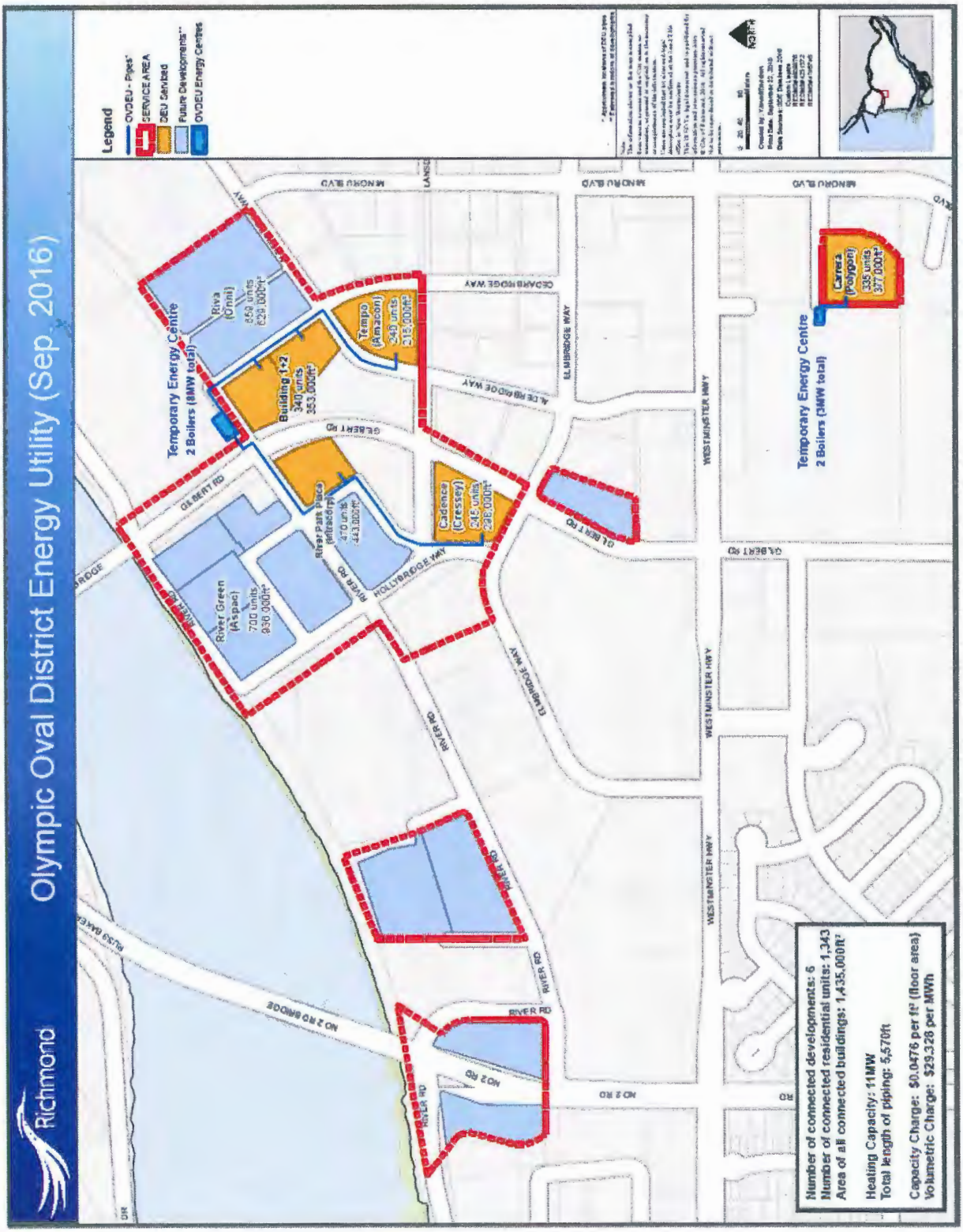
(a) capacity charge - a monthly charge of $0.0495 per square foot of gross floor area; and

(b) volumetric charge – a monthly charge of $30.501 per megawatt hour of Energy returned from the Heat Exchanger and Meter Set at the Designated Property.

PART 2 - EXCESS DEMAND FEE

Excess demand fee of $0.14 for each watt per square foot of the aggregate of the estimated peak heat energy demand referred to in section 19.1(e) (i), (ii), and (iii) that exceeds 6 watts per square foot.

Attachment 2 - Oval Village District Energy Utility Map (as of September 2016)



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