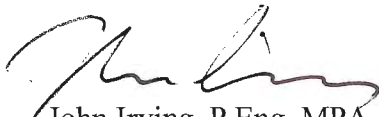




To: Public Works and Transportation Committee **Date:** September 25, 2017
From: John Irving, P.Eng. MPA **File:** 10-6600-10-02/2017-
Director, Engineering Vol 01
Re: **Oval Village District Energy Utility Bylaw No. 9134, Amendment Bylaw No. 9778**

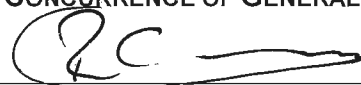

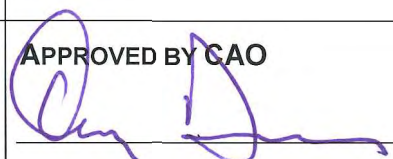
Staff Recommendation

1. That the staff recommendation to amend the Oval Village District Energy Utility rate for services as presented in Option 2 of the report titled "Oval Village District Energy Utility Bylaw No. 9134, Amendment Bylaw No. 9778" be endorsed; and
2. That the Oval Village District Energy Utility Bylaw No. 9134, Amendment Bylaw No. 9778 be introduced and given first, second and third readings.



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

Att. 3

REPORT CONCURRENCE		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER
Finance Department Law	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	
REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE	INITIALS: 	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 2018 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 financially sustainable over time for the City of Richmond's residents. In 2014, in order to accomplish these goals, LIEC and Corix Utilities (Corix) 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.

At the present time, there are eight buildings (Carrera, Onni Riva 1,2,3 River Park Place-Phase 1, Cressy Cadence, Amacon Tempo and ASPAC Lot 9) connected to the OVDEU (see Attachment 1) with over 1,675 residential units receiving energy from the OVDEU. Energy is currently being supplied from two interim energy centres which use natural gas boilers providing a combined 11 MW of heating capacity. When enough buildings are connected to the system, a permanent energy centre will be built which will produce low carbon energy, expected 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 2018 OVDEU Rates

The 2017 OVDEU rate is comprised of:

1. A Capacity Charge (Fixed) - monthly charge of \$0.0495 per square foot of the building gross floor area; and
2. A Volumetric Charge (Variable) - charge of \$30.501 per megawatt hour of energy returned from the Heat Exchanger and Meter Set at the Designated Property.
3. Excess demand fee of \$0.14 for each watt per square foot of the aggregate of the estimated peak heat energy demand that exceeds 6 watts per square foot.

Factors that were considered when developing the 2018 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. It is estimated that customers using energy from a conventional utility system in a Business as Usual (BAU) scenario would see a blended rate increase of around 1.4% in 2018¹.
- **Financial Sustainability:** 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 includes recovery of the capital investment over time and built in a rate increase of 4% 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:** LIEC executed a concession agreement with Corix Utilities to design, construct, finance, operate and maintain the OVDEU. Under the agreement, Corix is entitled to recover from LIEC all capital and operating costs, as well as Corix's overall return on investment. All Corix's expenses are approved in accordance with prudent utility practice.
- **Forecasted Utility Costs:** BC Hydro's rates will have a 0% increase in 2018. Natural gas costs are increasing from January 1, 2018 by approximately 0.1% for a typical residential customer in Lower Mainland according to Fortis BC's filing with the British Columbia Utilities Commission for their 2018 rates (Order Number G-138-14). However, the recently announced increase in carbon tax to \$35/tonne in April 2018 will be an additional increase of 1.8% to the annual bill for a typical Fortis BC customer, resulting in a total estimated increase for the 2018 calendar year of 1.9%.

¹ 1.4% blended increase for 2018 is based on an estimated 0% increase of electricity cost and a 1.9% increase in natural gas cost assuming that all energy was provided for heating. Also, the business-as-usual (BAU) scenario assumption is 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 the CPI (2.1%).

- **Consumer and Municipal Price Indexes:** Other factors to consider include various price indexes. For example, the 2018 Consumer Price Index (CPI) is estimated to be 2.1%, while the 2018 Municipal Price Index (MPI) is estimated at 3.2%, both as estimated by the City's Finance Department.\

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

Option 1 – 2.1% increase to OVDEU rate for services (Not recommended)

Under this option, the rate would increase modestly to match the Consumer Price Index (CPI – projected at 2.1%), but it would be below 4% increase as built in the financial model. The OVDEU is still a young utility that is early in its operational life. The development of the Oval Village neighbourhood is still in progress and the OVDEU is continuously expanding. As a result, the OVDEU's utility (electricity and natural gas), operational, and maintenance costs are still largely based on the projections of the financial model. Additionally, the initial capital investments (by Corix) required to start up the OVDEU are significant which requires stable, long term repayment as per the Concession Agreement. Variation from the model may affect the long term performance of the OVDEU.

The OVDEU Concession Agreement with Corix and financial model have taken into consideration modest rate increases similar to the projected rate increases for the conventional utility providers' energy. A CPI based rate increase at this point in the utility life would have a negative impact on the financial performance of OVDEU and LIEC by increasing of the capital repayment deferral account balance², by causing the under-recovery of LIEC's operating expenses or by causing the OVDEU to lose financial self-dependency as a utility. As a result, this option is not recommended.

Option 2 – 4% increase to OVDEU rate for services (Recommended)

The proposed 4% rate increase under this option follows the OVDEU financial model. The OVDEU financial model follows the principle of full cost recovery where all capital and operating costs need to be recovered through revenues from user fees, making the OVDEU a financially self-sustaining utility. The recommended rate increase ensures the revenue necessary to recover LIEC's cost of service which includes Corix's fees for services and LIEC's operating expenses. Not following these calculated rate increases could result in the increase of the capital repayment deferral account balance² and/or under-recovery of LIEC's operating expenses impacting the OVDEU's financial self-dependency.

Even with no projected increase in 2018 rates for BC Hydro, the 4% rate increase is below the three year average rate increase of the conventional utilities (see Table 1 below). This is due to the fact that the OVDEU customer rates have been increasing less than those of conventional utilities. A 4% rate increase keeps the OVDEU rate competitive when compared to conventional system energy costs, based on the same level of service.

² Capital repayment deferral account is used to stabilize rates over time.

Table 1: Annual Percent Increase Comparison

	2016	2017	2018	3 Year Avg.
OVDEU Rate	4.0%	4.0%	4.0%	4.0%
Blended BAU Rate	4.5%	6.9%	1.4%	4.3%

A table summarizing the above proposed Rate for Service options is displayed in Attachment 2.

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 2018 OVDEU rate for services.

The recommended rate outlined in the proposed Oval Village District Energy Utility Bylaw No. 9134, Amendment Bylaw No. 9778 (Attachment 3), represents full cost recovery for the delivery of energy within the OVDEU service area.

Financial Impact

None. The 4% rate increase will help offset the operating and capital costs following the principle of full cost recovery as modeled in the OVDEU financial model and ensures that the OVDEU rate increase is below the three year average rate increase of the BAU scenario.

Conclusion

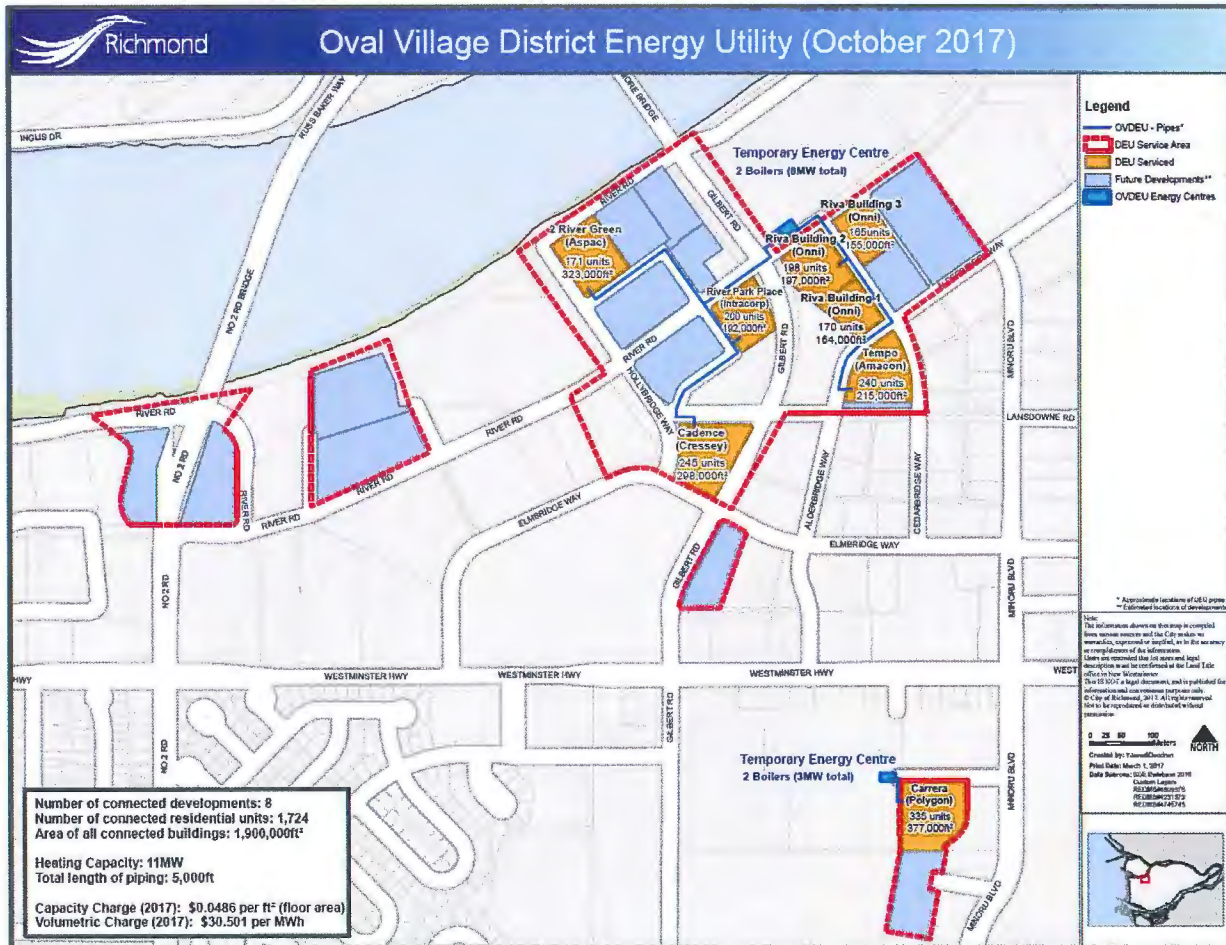
The recommended 4% increase (Option 2) for the 2018 OVDEU service rate supports Council’s objective to keep the annual energy costs for OVDEU customers competitive with conventional energy costs, based on the same level of service. This rate increase also ensures sufficient revenues will offset Corix’s fees for services and LIEC’s operating expenses. Staff will continuously monitor energy costs and review the rate to ensure rate fairness for consumers and financial sustainability for the City.



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- Att. 1: Oval Village District Energy Utility Map
- Att. 2: Oval Village District Energy Utility Bylaw No. 9134, Amendment Bylaw No.977

Attachment 1 – Oval Village District Energy Utility Map



Attachment 2 – Summary of Options: Proposed Rates for Services

Table 1: Proposed Rates for Services

	2017	2018	2018
	Current	Option 1 2.1% Increase	Option 2 4% Increase (Recommended)
Capacity Charge			
monthly charge per square foot of the building gross floor area	\$0.0495	\$0.0505	\$0.0515
Volumetric Charge			
charge per megawatt hour of energy consumed by the building	\$30.501	\$31.142	\$31.721
Excess Demand Fee			
charge for each watt per square foot of the aggregate of the estimated peak heat energy demand that exceeds 6 watts per square foot	\$0.14	\$0.14	\$0.15

Schedule A to Amendment Bylaw No. 9778

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 \$0.0515 per square foot of gross floor area;
and
- (b) volumetric charge – a monthly charge of \$31.721 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 \$0.15 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.