



# City of Richmond

## Report to Committee

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**To:** Finance Committee  
**From:** Jerry Chong, CPA, CA  
General Manager, Finance and  
Corporate Services  
Chief Financial Officer, Lulu Island Energy  
Company  
**Date:** October 10, 2024  
**File:** 01-0060-20-  
LIEC1/2024-Vol 01  
**Re:** **2025 District Energy Utility Rates**




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### Staff Recommendation

1. That the Alexandra District Energy Utility Bylaw No. 8641, Amendment Bylaw No. 10593 be introduced and given first, second and third readings;
2. That the Oval Village District Energy Utility Bylaw No. 9134, Amendment Bylaw No. 10594 be introduced and given first, second and third readings; and
3. That the City Centre District Energy Utility Bylaw No. 9895, Amendment Bylaw No. 10595 be introduced and given first, second and third readings.
4. That staff be directed to engage the province requesting that LIEC and other municipally owned district energy utilities are recognized as key contributors to the Province's climate change and electrification goals and, as such, receive financial support in the form of grants and incentives to help advance district energy initiatives.

Jerry Chong, CPA, CA  
General Manager, Finance and Corporate Services  
Chief Financial Officer, Lulu Island Energy Company  
(604-276-4064)

Att. 8

REPORT CONCURRENCE		
<b>ROUTED TO:</b>	<b>CONCURRENCE</b>	<b>CONCURRENCE OF GENERAL MANAGER</b>
Finance Department Law	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	
<b>REVIEWED BY SMT</b>	<b>INITIALS:</b> 	<b>APPROVED BY CAO</b> 

## Staff Report

### Origin

The purpose of this report is to recommend the 2025 Alexandra District Energy Utility (ADEU), Oval Village District Energy Utility (OVDEU), and City Centre District Energy Utility (CCDEU) district energy utility rates.

This report supports Council's Strategic Plan 2022-2026 Focus Area #3 A Safe and Prepared Community:

*3.4 Ensure civic infrastructure, assets and resources are effectively maintained and continue to meet the needs of the community as it grows.*

This report supports Council's Strategic Plan 2022-2026 Focus Area #5 A Leader in Environmental Sustainability:

*Leadership in environmental sustainability through innovative, sustainable and proactive solutions that mitigate climate change and other environmental impacts.*

*5.1 Continue to demonstrate leadership in proactive climate action and environmental sustainability.*

Lulu Island Energy Company Ltd. (LIEC), a corporation wholly-owned by the City of Richmond, was established to provide district energy services on behalf of the City. Information regarding LIEC's district energy utility (DEU) operations can be found in Attachment 1. All capital and operating costs are recovered through revenues from user fees, ensuring that the business is financially sustainable. City Council is the regulator and sets customer rates.

### Analysis

LIEC staff have assessed the following factors when developing the 2025 rate recommendation:

- **Financially self-sustainable:** All LIEC service areas were established on the basis that all capital and operating costs would be recovered through revenues from user fees. Expenditures required to provide utility service include capital, operations, utilities, financing and administration costs. These costs are susceptible to non-discretionary increases due to material and equipment cost increases, rises in electricity and natural gas rates and general inflation. Additionally, as endorsed by Council in 2022, LIEC executed a Project Agreement (PA) with City Centre Energy Limited Partnership (Corix) to design, construct, finance, operate and maintain the CCDEU. As part of the annual planning process, Corix submits to LIEC a request for a rate increase for next year in line with the financial model regularly updated by LIEC and Corix. Following the rate increases as per the long term financial model is critical to ensure the utility's positive financial performance and avoid increasing the capital repayment deferral account balance and/or under-recovering LIEC's operating expenses.

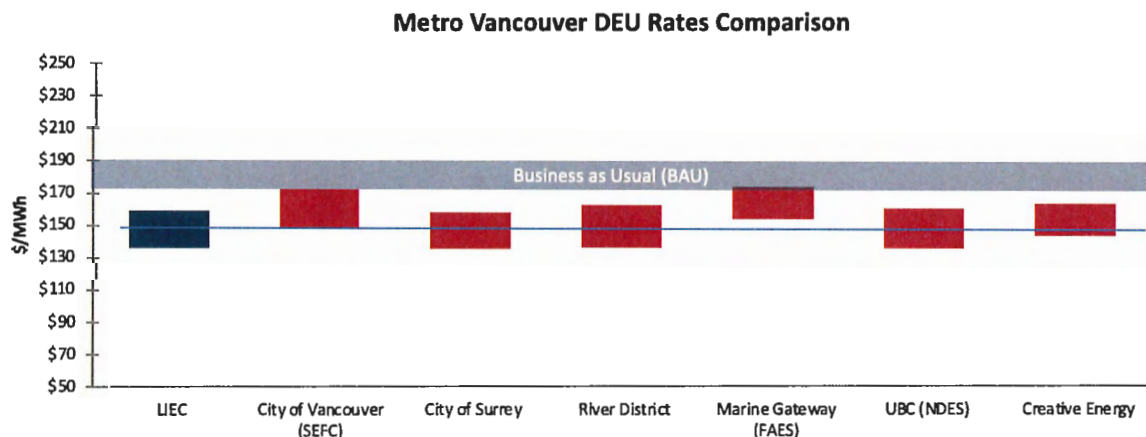
- Competitive Rate:** Council’s objective is to provide end users with annual energy costs that are competitive to conventional system energy costs, based on the same level of service. To date, LIEC’s district energy rates have been compared to a Business as Usual (BAU) scenario based on the increase of conventional utilities (i.e. Fortis BC and BC Hydro). Due to regulations, economics and current market conditions new developments using conventional energy systems are now being designed to be more energy efficient and produce less GHG emissions. Staff recently updated the BAU model to ensure the proposed district energy rates continue to be competitive with conventional energy systems that provide the same level of service and environmental performance.

Recommended 2025 Customer Rates

LIEC’s systems are still early in their operational life and still require significant capital investments in distribution infrastructure and low carbon energy sources to connect more customers and ensure low carbon objectives are achieved. The construction market in the lower mainland has continued to experience cost escalation over the past year. Based on data from Statistics Canada, the non-residential construction index experienced a 5.1% increase over the past 12 months. Similarly, due to an increase in commodity costs and delivery charges, and the escalation of the Provincial carbon tax, natural gas costs are also expected to increase by at least 7% next year. Due to the projected rises in electricity and natural gas rates and general cost escalation, LIEC will experience an estimated 5.3% increase in its base operating costs next year. Due to these reasons, a 5.3% rate increase would ensure all capital and operating costs are sufficiently recovered.

The recommended rate increase also supports Council’s objective to keep the annual energy costs for LIEC customers competitive with conventional energy costs, based on the same level of service. If the recommended rate increase is approved, LIEC’s customers would still be paying approximately 14% less than users using equivalent conventional energy systems in Richmond based on the same level of service. Staff also conducted a benchmarking analysis to compare LIEC rates with the rates of other district energy utilities in Metro Vancouver (see Graph 1 below).

Graph 1 - Metro Vancouver DEU Rates Comparison<sup>1</sup>



<sup>1</sup> Based on reported rates and assuming an average EUI of 80 kWh/m2 for heating and domestic hot water and 25 kWh/m2 for cooling

The recommended rate increase would result in approximately \$5.10 per month increase in DEU fees for the average LIEC residential customer; this is less than what they would experience if serviced by a conventional energy system.

### Financial Support

LIEC provides substantial environmental benefits and reduces electrical demand by using local energy sources and highly efficient heat pumps, resulting in a significant reduction in the amount of capital required by BC Hydro to service residential and commercial buildings in Richmond. Staff believes that engaging the province and federal agencies requesting that LIEC and other municipally owned district energy utilities are recognized as key contributors to the Province's climate change and electrification goals and, as such, receive financial support in the form of grants and incentives to help advance district energy initiatives is critical to ensure the long-term competitiveness of LIEC's rates.

### **Financial Impact**

None.

### **Conclusion**

The recommended 5.3% increase for ADEU, OVDEU and CCDEU 2025 service rates supports Council's objective to keep the annual energy costs for LIEC customers competitive with conventional energy costs, based on the same level of service. This rate increase also ensures sufficient revenues to offset the capital investment and operating costs. Staff will continuously monitor energy costs and review the rate to ensure fairness for consumers and cost recovery for LIEC.



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Senior Project Manager, LIEC  
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Helen Zhao, CPA  
Controller, LIEC  
(604-204-8699)

- Att. 1: District Energy in Richmond
- Att. 2: DEU Green House Gas (GHG) Emissions Reductions
- Att. 3: Alexandra Neighbourhood and ADEU Service Area
- Att. 4: Oval Village Neighbourhood and OVDEU Service Area
- Att. 5: City Centre and CCDEU Service Area
- Att. 6: ADEU Proposed 2025 Rates for Services
- Att. 7: OVDEU Proposed 2025 Rates for Services
- Att. 8: CCDEU Proposed 2025 Rates for Services

## Attachment 1 – District Energy in Richmond

Richmond’s 2041 Official Community Plan (OCP) establishes a target to reduce greenhouse gas (GHG) emissions 50 per cent below 2007 levels by 2030 and 100 per cent by 2050. The City identified district energy utilities (DEUs) as a leading strategy to achieve the City’s GHG reduction goals and incorporated Lulu Island Energy Company Ltd. (LIEC) in 2013 for the purposes of carrying out the City’s district energy initiatives on the basis of the following guiding principles:

1. The DEU will provide end users with energy costs that are competitive with conventional energy costs, based on the same level of service.
2. Council will retain the authority of setting customer rates, fees and charges for DEU services.
3. The DEU will provide a flexible platform for adopting low carbon energy technologies.

The City established three DEU service areas: ADEU, OVDEU, and CCDEU. Table 1 below provides a summary of the developments connected under the DEU service areas to-date.

Table 1 – DEU Service Areas - Current and Projected Connected Space

	Buildings To-Date	Residential Units To-Date	Floor Area	
			To-Date	Build-out
Alexandra DEU	13	2,200	2.4M ft <sup>2</sup>	4.4M ft <sup>2</sup>
Oval Village DEU	14	3,174	3.7M ft <sup>2</sup>	6.4M ft <sup>2</sup>
City Centre DEU	3	1,082	1.2M ft <sup>2</sup>	48.0M ft <sup>2</sup>
<b>Total</b>	<b>30</b>	<b>6,456</b>	<b>7.3M ft<sup>2</sup></b>	<b>58.8M ft<sup>2</sup></b>

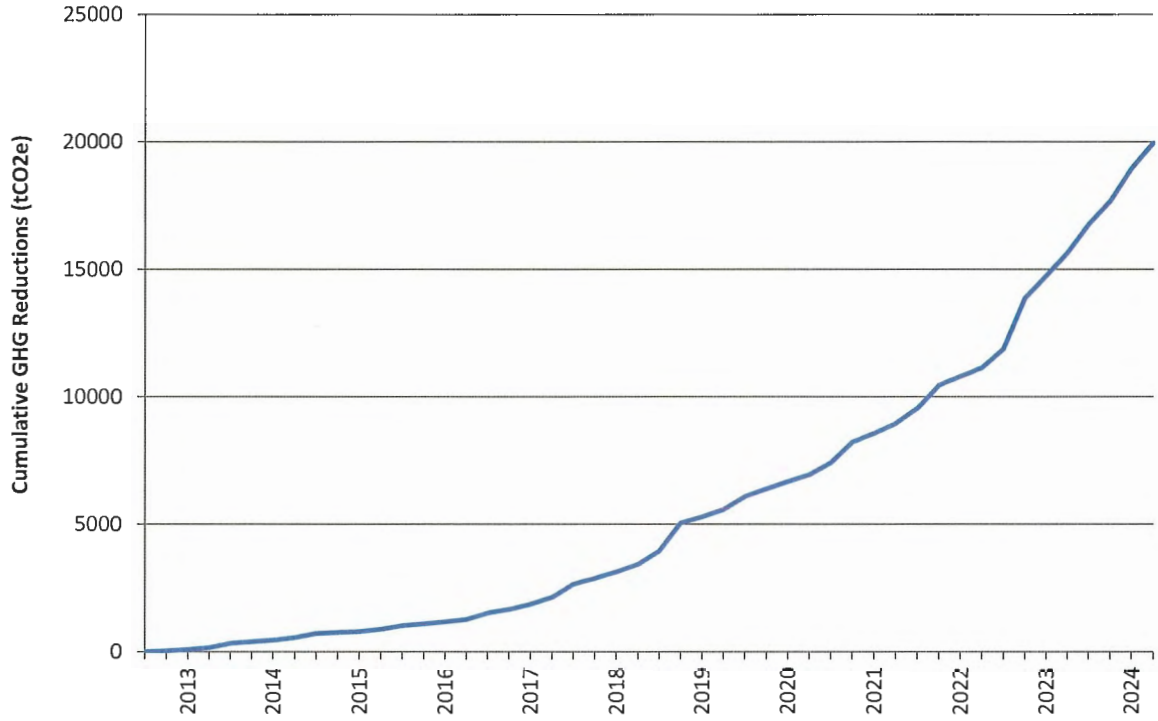
The ADEU provides heating and cooling services to ten residential buildings, the large commercial development at “Central at Garden City”, the Richmond Jamatkhana Temple and Fire Hall No. 3, comprising of 2,200 residential units and over 2.4 million square feet of floor area. While some electricity is consumed for pumping and equipment operations, most of this energy is currently produced locally from the geo-exchange fields in the greenway corridor and West Cambie Park, and highly efficient air source heat pumps.

The OVDEU services 14 buildings, containing 3,174 residential units. Energy is currently supplied from the three interim energy centres with natural gas boilers which provide 16 MW of heating capacity. LIEC received a \$6.2 million grant from the CleanBC Communities Fund for the design and construction of the sewer heat recovery technology and a permanent energy centre for the area. This project is in the preliminary design stage and is expected to be completed in 2028. Once completed, the system will be able to produce up to 80% of low-carbon energy from the Gilbert Trunk sanitary force main sewer.

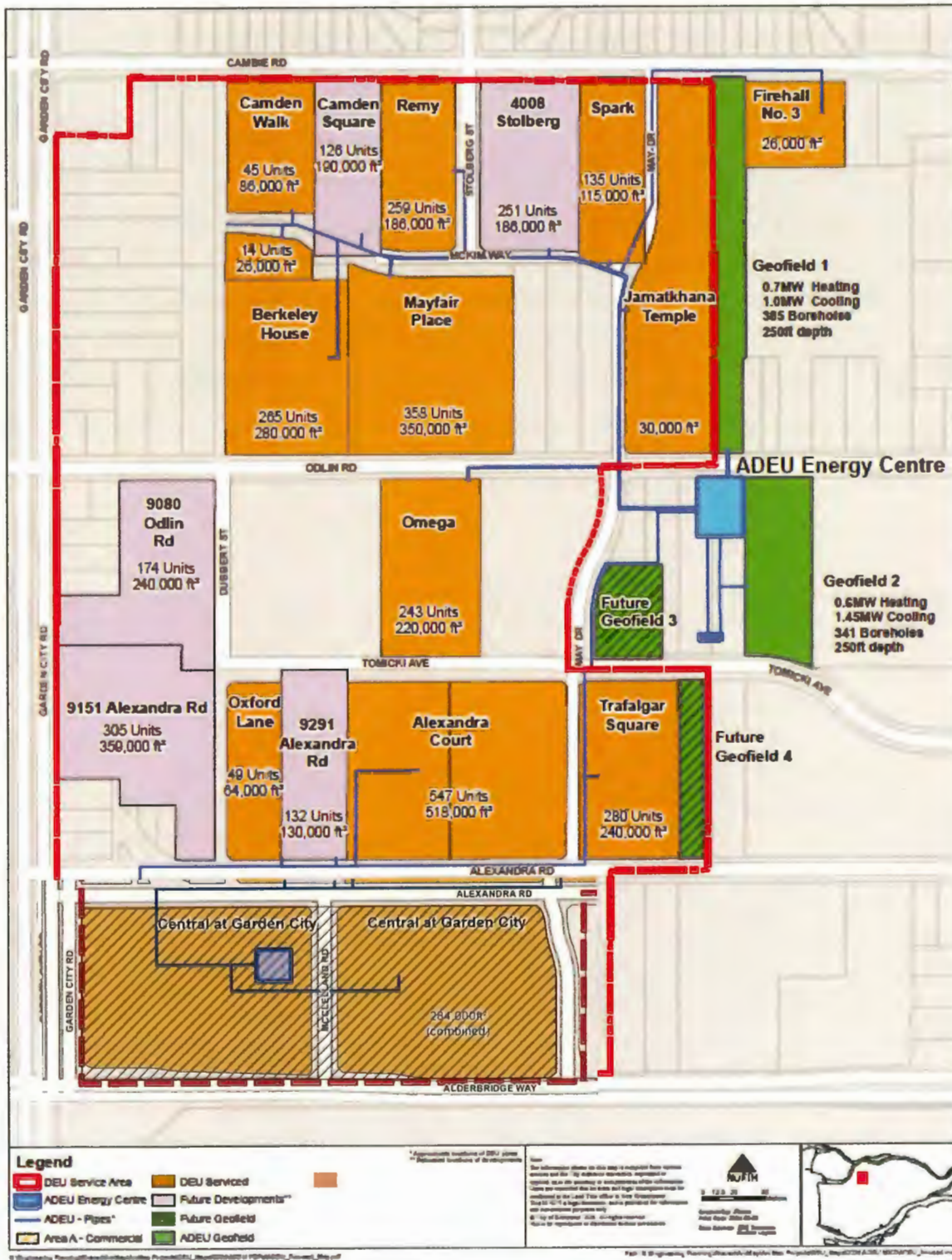
The CCDEU currently services three buildings, comprised of 1,082 residential units and approximately 1.2M ft<sup>2</sup> of floor area. While offsite energy centres progress through development, CCDEU utilizes on-site low carbon energy plants as a source of energy production. At full build-out, 176 developments, 28,000 residential units and approximately 48M ft<sup>2</sup> of floor space will be serviced by 5 permanent energy centres with over 130 MW of heating and 115 MW of cooling capacity. The built out system is estimated to reduce over one million tonnes of GHG emissions compared to conventional service.

**Attachment 2 – DEU Green House Gas (GHG) Emissions Reductions**

**DEU GHG Emissions Reductions**

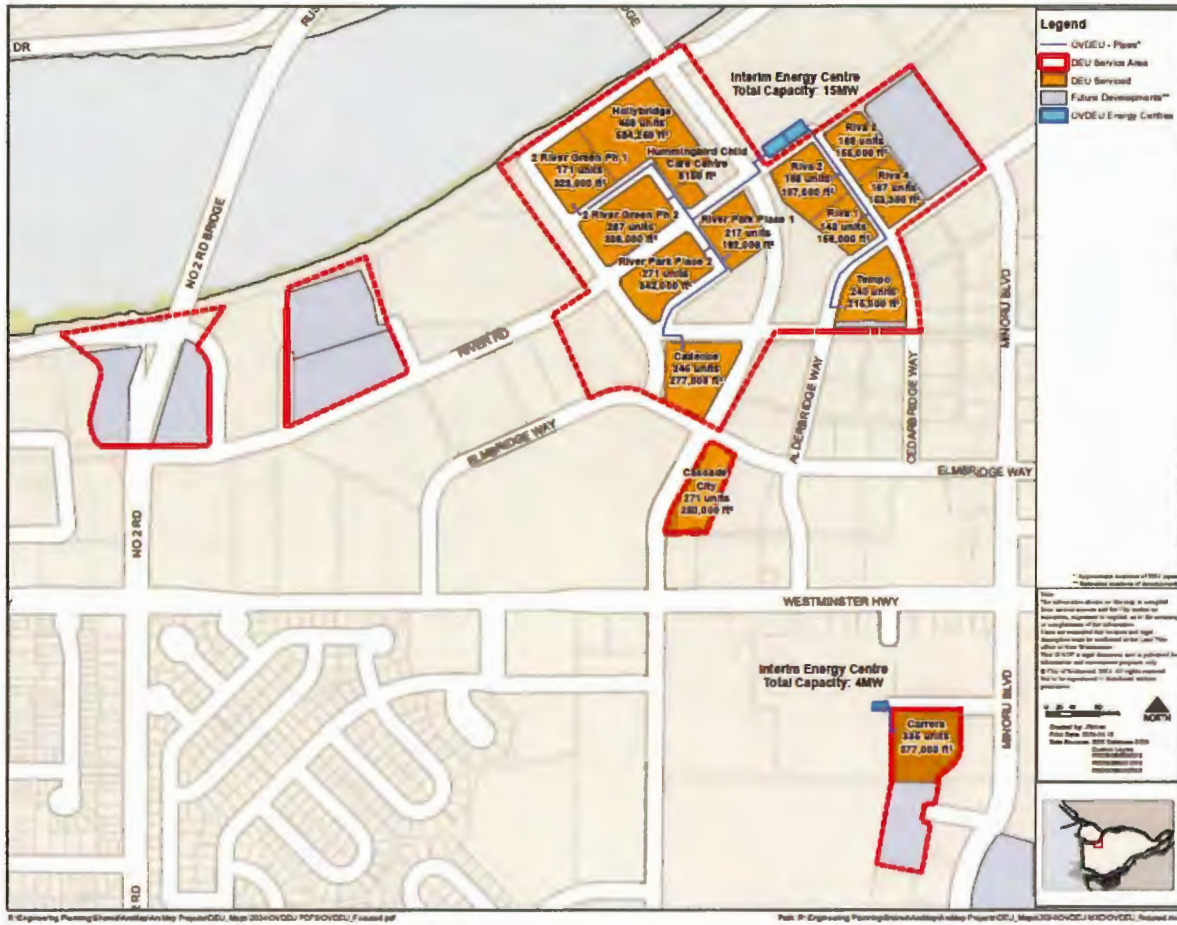


# Attachment 3 – Alexandra Neighbourhood and ADEU Service Area

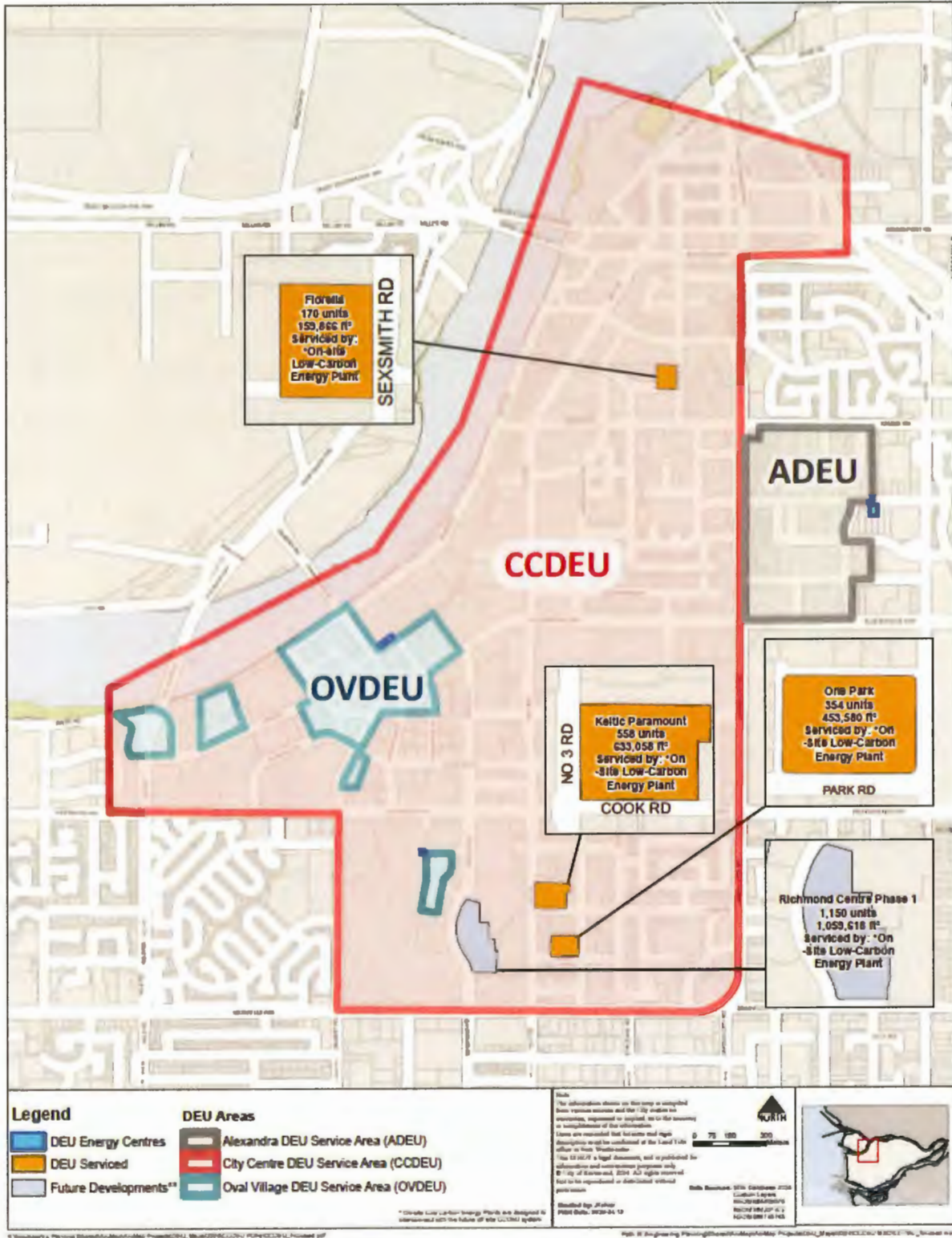




# Attachment 4 – Oval Village Neighbourhood and OVDEU Service Area



Attachment 5 – City Centre and CCDEU Service Area



**Attachment 6 – ADEU Proposed 2025 Rates for Services**

**Table 1: Proposed Rates for Services, excluding commercial area (Area A)**

	ADEU	
	2024	2025
<b>Capacity Charge One:</b> Monthly charge per square foot of the building gross floor area	\$0.0966	\$0.1017
<b>Volumetric Charge:</b> Charge per megawatt hour of energy consumed by the building	\$24.432	\$25.727
<b>Excess Demand Fee -</b> for each watt per square foot of each of the estimated peak heat energy demand and the estimated peak cooling demand that exceeds 6 W/ft <sup>2</sup>	\$0.1963	\$0.2067

**Table 2: Proposed Rates for Services, commercial area (Area A)**

	Area A	
	2024	2025
<b>Volumetric Charge:</b> Charge per megawatt hour of energy consumed	\$94.835	\$99.861

**Attachment 7 – OVDEU Proposed 2025 Rates for Services**

<b>OVDEU</b>		
	<b>2024</b>	<b>2025</b>
<b>Capacity Charge One:</b> Monthly charge per square foot of the building gross floor area	\$0.0675	\$0.0711
<b>Volumetric Charge:</b> Charge per megawatt hour of energy consumed by the building	\$41.562	\$43.765
<b>Excess Demand Fee</b> - for each watt per square foot of the aggregate of the estimated peak heat energy demand that exceeds 6 W/ft <sup>2</sup>	\$0.1963	\$0.2067

**Attachment 8 – CCDEU Proposed 2025 Rates for Services**

	CCDEU	
	2024	2025
<b>Capacity Charge One:</b> Monthly charge per square foot of the building gross floor area	\$0.0787	\$0.0829
<b>Volumetric Charge:</b> Charge per megawatt hour of energy consumed by the building	\$48.378	\$50.942
<b>Excess Demand Fee</b> - for each watt per square foot of each of the estimated peak heat energy demand and the estimated peak cooling demand that exceeds 6 W/ft2	\$0.1963	\$0.2067



**Alexandra District Energy Utility Bylaw No. 8641  
Amendment Bylaw No. 10593**

The Council of the City of Richmond enacts as follows:

1. The Alexandra District Energy Utility Bylaw No. 8641, as amended, is further amended by deleting Schedule C (Rates and Charges) in its entirety and replacing it with a new Schedule C attached as Schedule A to this Bylaw.
2. This Bylaw is cited as **“Alexandra District Energy Utility Bylaw No. 8641, Amendment Bylaw No. 10593”**

FIRST READING

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THIRD READING

ADOPTED

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

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MAYOR

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CORPORATE OFFICER

**Schedule A to Bylaw No. 10593*****SCHEDULE C to BYLAW NO. 8641******Rates and Charges*****PART 1 - RATES FOR SERVICES**

*The following charges, as amended from time to time, will constitute the Rates for Services for the Service Area excluding shaded Area A as shown in Schedule A to this Bylaw:*

- (a) Capacity charge – a monthly charge of \$0.1017 per square foot of Gross Floor Area; and*
- (b) Volumetric charge – a charge of \$25.727 per megawatt hour of Energy returned from the Energy Transfer Station at the Designated Property.*

**PART 2 - EXCESS DEMAND FEE**

Excess demand fee of \$0.2067 for each watt per square foot of each of the estimated peak heat energy demand and estimated cooling demand referred to in section 21.1(e)(i), 21.1(e)(ii), and 21.1(e)(iii) that exceeds 6 watts per square foot.

**PART 3 - RATES FOR SERVICES APPLICABLE TO AREA A**

*The following charges will constitute the Rates for Services applicable only to the Designated Properties identified within the shaded area (Area A) shown in Schedule A to this bylaw:*

- (a) Volumetric charge – a charge of \$99.861 per megawatt hour of Energy returned from the Energy Transfer Station at the Designated Property calculated on each of (i) an energy use of 2644 MWh per annum (“Basic Supply Amount”), and (ii) any energy use in excess of the Basic Supply Amount.*



**Oval Village District Energy Utility Bylaw No. 9134  
Amendment Bylaw No. 10594**

The Council of the City of Richmond enacts as follows:

1. The Oval Village District Energy Utility Bylaw No. 9134, as amended, is further 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 Bylaw.
2. This Bylaw is cited as **“Oval Village District Energy Utility Bylaw No. 9134, Amendment Bylaw No. 10594”**.

FIRST READING

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MAYOR

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CORPORATE OFFICER



**Schedule A to Bylaw No. 10594**

**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 \$0.0711 per square foot of gross floor area;  
and
- (b) volumetric charge – a monthly charge of \$43.765 per megawatt hour of Energy returned from the Energy Transfer Station at the Designated Property.

**PART 2 - EXCESS DEMAND FEE**

Excess demand fee of \$0.2067 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.



City Centre District Energy Utility Bylaw No. 9895
Amendment Bylaw No. 10595

The Council of the City of Richmond enacts as follows:

- 1. City Centre District Energy Utility Bylaw No. 9895, as amended, is further amended by deleting Schedule D (Rates and Charges) in its entirety and replacing it with a new Schedule D as attached as Schedule A to this Bylaw.
2. This Bylaw is cited as "City Centre District Energy Utility Bylaw No. 9895, Amendment Bylaw No. 10595".

FIRST READING

SECOND READING

THIRD READING

ADOPTED

MAYOR

Four horizontal lines for signatures of Council members and the Corporate Officer.

CORPORATE OFFICER

Table with approval stamps: CITY OF RICHMOND, APPROVED for content by originating dept. (CR), APPROVED for legality by Solicitor (BRB).

**Schedule A to Bylaw No. 10595**

**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 \$0.0829 per square foot of gross floor area; and
- (b) volumetric charge – a monthly charge of \$50.942 per megawatt hour of Energy returned from the Energy Transfer Station at the Designated Property.

**PART 2 - EXCESS DEMAND FEE**

Excess demand fee of \$0.2067 for each watt per square foot of each of the estimated peak heat energy demand and estimated cooling demand referred to in section 19.1(f) (i), 19.1(f) (ii) and 19.1(f) (iii) that exceeds 6 watts per square foot.