



City of Richmond

Report to Committee

To: Finance Committee

Date: November 28 2018

From: John Irving, P.Eng., MPA
Director, Engineering
Chief Executive Officer, Lulu Island Energy
Company

File: 10-6600-10-01/2018-Vol 01

Jerry Chong, CPA, CA
Director, Finance
Chief Financial Officer, Lulu Island Energy
Company

Re: Lulu Island Energy Company – 3rd Quarter Financial Information

Staff Recommendation

That the Lulu Island Energy Company report titled “Lulu Island Energy Company – 3rd Quarter Financial Information” dated November 28, 2018 from the Chief Executive Officer and Chief Financial Officer, Lulu Island Energy Company be received for information.

John Irving, P.Eng., MPA
Director, Engineering and
Chief Executive Officer,
Lulu Island Energy Company
(604-276-4140)

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

Att. 2

REPORT CONCURRENCE	
CONCURRENCE OF GENERAL MANAGER	
REVIEWED BY 1A / 5B	INITIALS:
APPROVED BY CAO	

Staff Report

Origin

Since 2009, City staff have been implementing district energy projects and providing Richmond's residents with heating and cooling energy services from sustainable district energy systems. Council adopted the program with the objectives that:

- the district energy utility (DEU) will provide end users with energy costs that are competitive with conventional system energy costs based on the same level of service, and
- Council retains the authority of setting customer rates, fees and charges for DEU services.

In 2013 the Lulu Island Energy Company (LIEC) was established as a wholly owned corporation of the City of Richmond for the purpose of managing district energy utilities on the City's behalf. As approved by Council in April 2014, Council authorized City staff to execute a District Energy Utilities Agreement between the City and LIEC, assigning LIEC the function of providing district energy services on behalf of the City, including partnering with third parties to deliver such services.

This 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.

This supports Council's 2014-2018 Term Goal #6 Quality Infrastructure Networks:

Continue diligence towards the development of infrastructure networks that are safe, sustainable, and address the challenges associated with aging systems, population growth, and environmental impact.

6.1. Safe and sustainable infrastructure.

6.2. Infrastructure is reflective of and keeping pace with community need.

Background

District Energy Utilities as Part of a Sustainable Community

Richmond's 2041 Official Community Plan (OCP) establishes a target to reduce community greenhouse gas (GHG) emissions 33 per cent below 2007 levels by 2020 and 80 per cent by 2050. The OCP also includes a target to reduce energy use 10 per cent below 2007 levels by

2020. Richmond's Community Energy & Emissions Plan (CEEP) identifies that buildings account for about 64 per cent of energy consumption in Richmond, and 43 per cent of GHG emissions; residential developments especially are prime energy consumers in the community. Richmond is growing, with today's population expected to increase by 35 per cent by 2041, and employment by 22 per cent. This growth will be accompanied by new building development, the majority of which will occur in Richmond's City Centre.

In this context, shifting to more sustainable energy systems for buildings will support the City's climate and energy targets. Sustainable energy systems have the following characteristics:

- Use energy wisely – e.g. they are efficient, minimize consumption, minimize waste energy, and use low carbon sources of energy.
- Increase energy security by being reliant and resilient – e.g. they minimize price volatility, incorporate localized systems to avoid being completely dependent on external systems, and are adaptable to future technologies and energy sources.
- Have low-carbon intensity – e.g. they emit zero to low GHG emissions.
- Are cost-effective and do not result in unacceptable impacts (social, environmental or economic).

Based on the above criteria, the City has identified district energy utilities (DEUs) as a key component of sustainable energy systems that can be implemented in neighbourhoods undergoing redevelopment. Some of the key benefits of a DEU are as follows:

- Reduced building capital and operations costs – DEUs replace the need for individual buildings to have their own boilers or furnaces, chillers or air conditioners, resulting in capital cost and maintenance cost savings.
- Efficiency – DEUs can operate more efficiently than typical stand-alone building mechanical systems, thereby reducing emissions and costs.
- Reduced emissions through using renewable energy and waste energy sources – DEUs can use renewable sources such as sewer heat recovery, geothermal, biomass, combined heat and power generation, and other technologies with the potential for very low emissions. Moreover, DEUs can capture and use waste heat from industrial, commercial and institutional use (i.e. ice surfaces and wastewater treatment plants).
- Reliability – DEUs use proven technology; most DEU's operate with a high reliability rate.
- Resiliency – District energy systems' ability to make use of multiple different fuel sources allow DEUs to incorporate new energy source opportunities in the future, providing financial and environmental resiliency and mitigating the potential for volatility in thermal energy prices.

District Energy in Richmond

LIEC currently owns and operates the Oval Village District Energy Utility (OVDEU), Alexandra District Energy Utility (ADEU), and City Center District Energy Utility (CCDEU), as well as advances new district energy opportunities. Attachment 1 indicates the current and planned future DEU areas throughout Richmond. LIEC has been recognized for excellence, leadership, innovation and sustainability through receiving thirteen awards since the company's inception, ranging from the provincial to international scale.

LIEC currently services eight buildings in the OVDEU service area, containing over 1,700 residential units. 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, a permanent energy centre will be built which will produce low carbon energy. Currently the OVDEU is planned to harness energy from the Gilbert Trunk sanitary force main sewer through the implementation of the permanent energy centre in 2024. Over the next 30 years, the OVDEU system is anticipated to reduce GHG emissions by more than 52,000 tonnes of CO₂ as compared to business as usual¹. OVDEU is developed under a concession agreement with Corix Utilities Inc (Corix). During the concession period (30 years), Corix will design, build, finance and operate the OVDEU and will supply energy services to LIEC; LIEC owns the assets and Council sets customer rates.

LIEC provides heating and cooling services to five residential buildings, the large commercial development at "Central at Garden City", the Richmond Jamatkhana temple and Fire Hall #3, in total connecting over 1450 residential units and over 1.6 million square feet of floor area in the ADEU service area,. While some electricity is consumed for pumping and equipment operations, almost 100% 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 backup and peaking natural gas boilers and cooling towers in the energy centre have operated for only a few days throughout the system's operation to date. LIEC staff estimate that this has eliminated 2,340 tonnes of GHG emissions in the community.

Financial Impact

None.

¹ Assumed that all energy was provided for heating. The business-as-usual (BAU) assumed that 40% of the building heating load would be provided from electricity and the remaining 60% would be from gas make-up air units.

Conclusion

The LIEC 3rd Quarter Financial Information approved by LIEC Board is presented to Council for information.

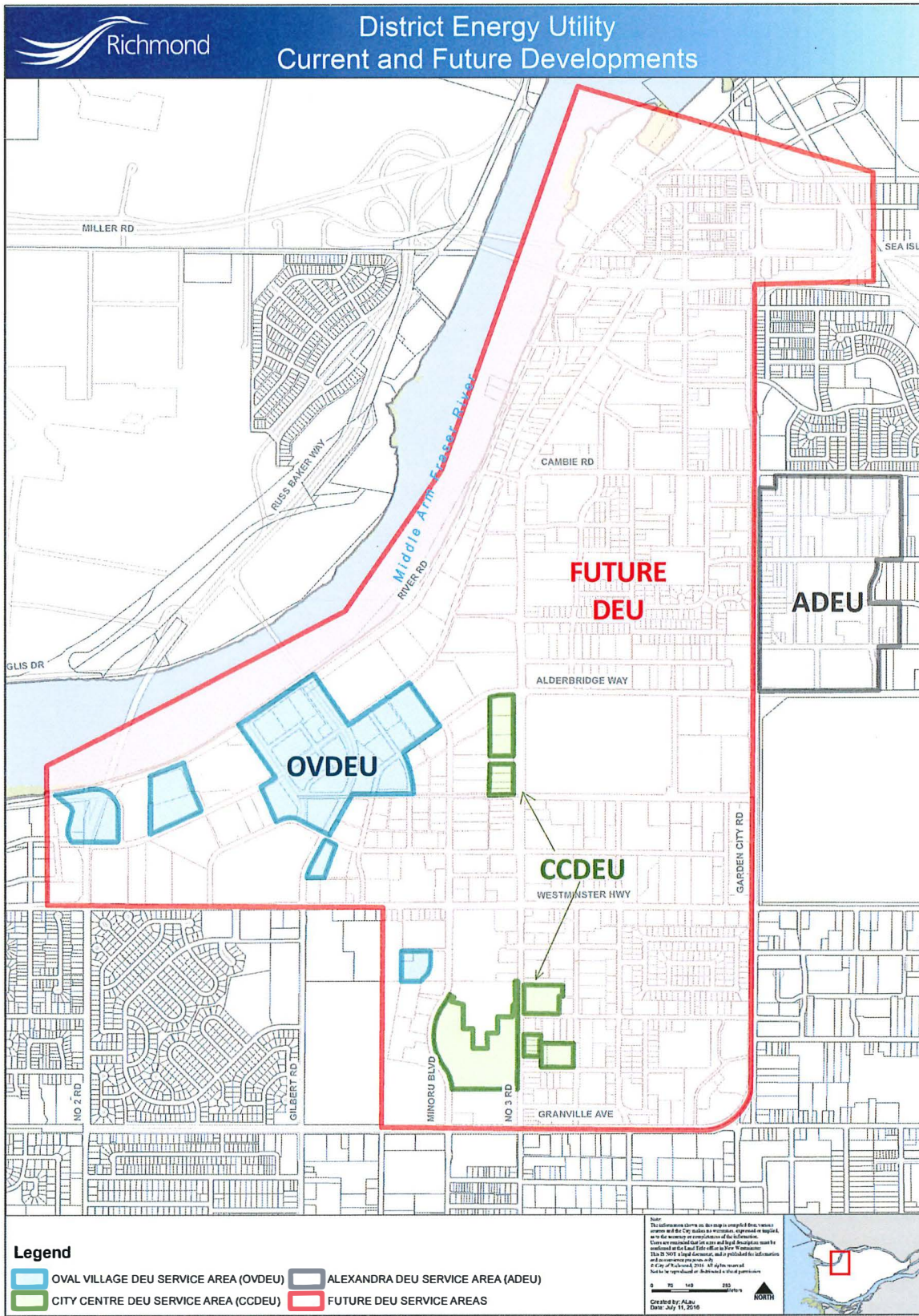


Peter Russell, MCIP RPP
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AP

Att. 1: Map of Current and Future District Energy Utility Areas in Richmond
Att. 2: Lulu Island Energy Company – 3rd Quarter Financial Information

Attachment 1 – Map of Current and Future District Energy Utility Areas in Richmond



Attachment 2 – Lulu Island Energy Company – 3rd Quarter Financial Information



6911 NO. 3 ROAD
RICHMOND, BC V6Y 2C1

Report

DATE: November 8, 2018

TO: Board of Directors

FROM: Helen Zhao, Controller

Re: **Lulu Island Energy Company – 3rd Quarter Financial Information**

Staff Recommendation

That the 3rd Quarter Financial Information as presented in the report titled “Lulu Island Energy Company – 3rd Quarter Financial Information” dated November 8, 2018 from the Chief Executive Officer and Chief Financial Officer, Lulu Island Energy Company, be approved.

Background

Lulu Island Energy Company (LIEC), a corporation wholly-owned by the City of Richmond, was established to provide district energy services on behalf of the City. This report was prepared with the objective to provide pre-audited financial information to the Board and LIEC’s shareholder, represented by Richmond City Council.

Analysis

Financial statements have been prepared in accordance with International Financial Reporting Standards (IFRS). The LIEC’s pre-audited Q3 financial information consists of a Statement of Comprehensive Income, which includes a summary of revenues, expenses, other activities and net income for the quarter (included in Attachment 1).

Revenues

The metered billing revenue reflects energy sales. The total metered billing revenue of \$2,540,723 has slightly exceeded budget, with \$1,192,292 earned from the Oval Village District Energy Utility (OVDEU) and \$1,348,432 earned from the Alexandra District Energy Utility (ADEU).

Cost of Sales

The cost of sales is the accumulated total of expenses attributable to the metered billing revenue, which includes utilities (electricity and natural gas), contract services and amortization expenses. Overall, the cost of sales of \$1,798,373 is in line with the budget. The contract expense is above budget by 2% mainly due to unscheduled repairs and maintenance. The utility expenses are slightly higher than the budget because of higher energy use by customers, which is in line with the revenue increase.

General and Administration Expenses

The general and administration expenses are expenditures that LIEC incurs to engage in business development activities and includes salaries and benefits, administration expenses, professional fees, etc. The administration expenses include the overhead allocation paid by LIEC to the City of Richmond for the support provided by the City. Overall, the general and administration expenses have a favorable variance of 6%.

Contributions and Financing Expense

The contributions and financing expense section represents other sources of revenue and financing expense for the business. The finance income refers to interest earned on term deposits. The income is higher than the budget due to increased interest rates during the year. The financing expense is lower than the budget mainly due to timing of additional capital required in construction. Overall, there is a favorable variance.

LIEC's EBITA (earnings before interest, tax, and amortization), used as a proxy to measure LIEC's financial performance, at the end of the third quarter is 6% higher than the budget. The net income at the end of the third quarter is \$676,863. Consistent with strategic objectives, the net income is being set aside in LIEC's equity to build a reserve fund for future capital replacement.

Financial Impact

None.

Conclusion

The pre-audited financial information shows that LIEC's financial position is positive.



Helen Zhao, CPA, CA
Controller

Attachment 1: Summary of Q3 Financial Information (unaudited)

Attachment 1 – Summary of Q3 Financial Information (unaudited)

	2018 Q3 Actual	2018 Q3 Budget	\$ Changes	% Change
Revenues				
Metered Billings (Quarterly)	\$ 2,540,723	\$2,534,343	6,380	0%
Service fee	700,661	700,661	-	-
	3,241,385	3,235,004	6,380	0%
Cost of Sales				
Contracts	499,404	491,677	7,727	2%
Utilities	442,779	439,388	3,391	1%
Amortization	856,190	848,538	7,652	1%
	1,798,373	1,779,603	18,770	1%
Gross margin	1,443,011	1,445,401	(12,390)	(1%)
General and Administration Expenses				
Salaries and benefits	453,448	461,545	(8,096)	(2%)
Administration expenses	82,091	100,137	(18,046)	(18%)
Insurance	65,761	65,000	761	1%
Professional Fees	31,128	48,750	(17,622)	(36%)
	632,429	675,432	(43,003)	(6%)
Net income before other items	810,582	779,970	30,613	4%
Contributions and Financing expense				
Developer contributions	80,070	64,744	15,326	24%
Energy modeling review fee	21,540	20,000	1,540	8%
Finance income	74,129	30,000	44,129	147%
Financing expense	(309,458)	(314,639)	5,181	(2%)
	(133,720)	(199,896)	66,176	(33%)
Net Income	\$676,863	\$580,074	\$96,789	17%
Earnings before interest, taxes and amortization (EBITA)				
Net income per above	676,863	580,074	96,789	17%
Financing expense	309,458	314,639	(5,181)	(2%)
Amortization expense	856,190	848,538	7,652	1%
EBITA	1,842,511	1,743,251	99,260	6%