



2019 | Annual Report



A photograph of a modern building's exterior. The foreground shows a covered walkway with a wooden ceiling and several vertical wooden support posts. To the right, a wall of large glass panels displays vibrant, abstract, colorful patterns. The walkway leads towards a snowy outdoor area with bare trees and a multi-story building in the background under a blue sky with light clouds.

Clean, efficient  
energy, for now  
and the future.



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Distribution piping inside the Trafalgar building



## ■ MESSAGE FROM THE BOARD CHAIR

The Lulu Island Energy Company (LIEC) continues to deliver on the City of Richmond's vision to become a sustainable, low carbon community. Of note in 2019, the company continued to expand the Alexandra, Oval Village and City Centre District Energy Utilities to meet demand while maintaining LIEC's commitment to efficient, reliable service to existing customers. As development and construction continued, the amount of residents being served by low carbon energy increased significantly in 2019. LIEC entered into a MOU with the Canada Infrastructure Bank to explore a potential funding partnership for the development of the City Centre district energy utility. All of these important changes are summarized in this year's annual report.

2019's work by the company solidified LIEC's district energy business as an important contributor in achieving the City of Richmond's vision. In this context, I present the 2019 Annual Report to our shareholder, the City of Richmond, as a record of the company's financial performance and customer service excellence.

A handwritten signature in black ink, appearing to read 'Jerry Chong'.

**Jerry Chong**  
*Chair, Lulu Island Energy Company*



## ■ MESSAGE FROM THE CHIEF EXECUTIVE OFFICER

2019, like previous years was a busy year of expansion of services and infrastructure; the Oval Village District Energy Utility (OVDEU) service area was expanded to include a new development, River Park Place 2 on 6899 Pearson Way. To prepare for expected future energy demand, the Alexandra District Energy Utility (ADEU) installed distribution pipes below Alexandra Park to allow for the future addition of two new geo-exchange fields. The Association of Energy Engineers awarded Richmond's district energy program and LIEC with the Canada Region Energy Project of the Year award for their implementation approach to district energy services in the City Centre. The Canadian Association of Municipal Administrators presented the City with the Environment award which recognizes the commitment of a municipality to environmentally sustainable governance, to protecting the environment and to combating climate change.

In terms of new service areas, 2019 saw three developments totalling approximately 400,000 square feet, incorporated into the expanding City Centre service area. New developments in this area will be serviced by low carbon energy systems in the coming years. Construction of these buildings will begin in 2020 allowing for continued, rapid expansion of district energy services. I am pleased to report that LIEC continues to be Richmond's solution for delivering "clean, efficient energy for now and the future." This report provides a summary of the outcomes of the company's hard work with its partners and customers in 2019 and its excellent financial standing.



**John Irving**  
*CEO, Lulu Island Energy Company*







The Alexandra District Energy Utility distribution network used to deliver energy to customer's homes



## ABOUT THE COMPANY AND DISTRICT ENERGY IN RICHMOND

LIEC is a wholly-owned municipal corporation, established to operate district energy utility systems in the City of Richmond on the City's behalf.

The goals of LIEC are to:

- establish a highly efficient district energy network providing heating and, in some cases cooling services to buildings at competitive rates;
- provide reliable, resilient local energy for the benefit of its customers;
- operate and maintain low carbon energy systems;
- position the City of Richmond to be a national and international leader in district energy utilities;
- develop and manage effective partnerships; and
- sustain long term financial viability.

LIEC was incorporated in August 2013. At December 31, 2019, LIEC had tangible capital assets of \$33,412,384 relating to the development of the Alexandra and Oval Village District Energy Utilities. For the year ended December 31, 2019, LIEC had revenues of \$5,047,617 related to meter billing fees, service fees, connection fees, and energy model review fees, and total expenses of \$3,413,219.

### Did you know?

LIEC energy systems are designed and operated with the goal to reduce greenhouse gas emissions and help the City of Richmond meet its climate change goals.





## ■ SPOTLIGHT ON 2019: PROGRESS REPORT

### **Oval Village District Energy Utility (OVDEU) Service Area Expansion**

The OVDEU was the first district energy project in development under LIEC's direct oversight following Richmond City Council's adoption of the OVDEU Service Area Bylaw in April 2014. In October 2014, LIEC entered into a Concession Agreement with Corix Utilities Inc. to design, construct, finance, operate and maintain the system. As of 2019, the OVDEU's two interim energy centres provide heating and domestic hot water energy services to 9 buildings in the Oval Village (5 multi-unit residential buildings and 4 mixed-use buildings) connecting over 1,900 units and a total of 2.24 million square feet of floor space. The interim energy centres, complete with 11MW of heating capacity, provided a reliability of 99.6% in 2019. These facilities will be in operation until there are enough buildings connected to the system to justify the costs of constructing a major energy plant that is envisioned to extract renewable thermal energy from the Gilbert Trunk sanitary force main sewer, currently planned for 2023.

### **Alexandra District Energy Utility (ADEU) New Infrastructure**

ADEU, LIEC's flagship geo-exchange system, currently provides energy to ten buildings (7 multi-unit residential buildings, the Jamatkhana Temple, the Central at Garden City development, and Richmond's Fire Hall No. 3) connecting over 1735 residential units and over 300,000 square feet of non-residential floor area (1.9 million square feet total). In 2019, new distribution pipes were installed under West Cambie Park to allow for the future addition of two new geo-exchange fields to ensure the system will be able to provide the same share of renewable energy to future customers. As of December 31, 2019, the ADEU system delivered 31,022 MWh of energy to customers for space heating, cooling and domestic hot water heating. While some electricity is consumed for pumping and equipment operations, almost 100% of this energy was produced locally from the geo-exchange fields located in the greenway corridor and West Cambie Park.

### **District Energy in the City Centre Area**

A City Centre District Energy Utility (CCDEU) due diligence process has been underway to assess infrastructure strategies and low carbon solutions since 2017. In the interim, LIEC introduced a servicing strategy to expand LIEC's customer base that enables immediate implementation of GHG emissions reduction for upcoming developments throughout the City Centre area. This servicing strategy requires developments in the City Centre area undergoing rezoning to utilize onsite low-carbon energy plants so that LIEC can provide immediate heating, cooling, and domestic hot water heating service to these customers. In 2019, nine developments have been incorporated into the CCDEU bylaw service area, amounting to approximately 4.6 million square feet. The majority of this space is residential use, with some commercial, office and retail uses as well. The CCDEU systems are under construction, expected to service first customers in 2021.



## Ongoing Communications to Customers and Richmond Residents

When new buildings are connected to LIEC's services, communication materials are distributed to new homeowners to create awareness about energy utility services provided by LIEC. Buyers of new units serviced by LIEC in the Oval Village and Alexandra service areas receive information packages about rate structure and services. Additionally, LIEC's website provides information to all district energy stakeholders while also presenting engaging web content and videos that support LIEC's public engagement goals. In 2019, the Company had a significant presence at Richmond's popular Public Works Open House. Tours were given to residents to increase awareness about district energy and its benefits. Moreover, the Company facilitated numerous tours of the district energy utilities to engage interested, industry professionals and promote the benefits of low carbon energy systems.



Ali the Owl was created from a competition to create a mascot for LIEC that provides awareness about barn owls in Richmond. The ADEU includes barn owl boxes for the owls to nest.



2019 Public Works Open House



New development in the OVDEU service area

## LOOKING FORWARD: 2020 WORK PLAN

### Ongoing Development in the Oval Village Area

Rapid development activity continues in the Oval Village within and adjacent to the DEU service area. For this reason, LIEC intends to continue to monitor development activity and bring forward to Richmond City Council recommendations for a broader expansion of the service area. This move will provide certainty to new developers about the City's expectations for connecting to OVDEU. LIEC and Corix work hard to meet the needs of the OVDEU's customers. By leveraging expertise in design, construction and operation of district energy utilities, the LIEC team will ensure the delivery of 2020 expansion projects on time, while continuing to provide resilient and reliable energy services to our customers.

#### Anticipated Occupancy

Aspac Lot 12 – 6622 Pearson Way	2020
Cascade City – 5766 Gilbert Road	2021
Riva, Building 4 – 7771 Alderbridge Way	2021
Riva, Buildings 5/6 – 7811 Alderbridge Way	2021/22

### Alexandra District Energy Utility Expansion

After rapid growth in 2019, expansion and development in the West Cambie Neighbourhood continues. Three new buildings are expected to connect to ADEU in 2020. These new developments will increase the connected floor area by over 600,000 ft<sup>2</sup>, bringing the total serviced area to 2.3 million ft<sup>2</sup> and 12 connected buildings. Efficient planning allowed for the prior installation of the distribution piping for these buildings, so these new connections will be completed with no impact to the public roadways.

#### Anticipated Occupancy

Spark – 4033 May Drive	2020
Westmark – 9211 McKim Way	2020
Berkeley House – 9213 Odlin Road	2020
Primstone Gardens – 4008 Stolberg Street	2021



## New District Energy Services in City Centre

In addition to advancing the CCDEU due diligence activities with the preferred proponent, LIEC staff will monitor development activity in City Centre, and provide recommendations to City Council to expand the City Centre DEU service area as necessary to incorporate and secure additional upcoming developments. LIEC staff will also work closely with the developments already committed to installing onsite low carbon energy plants to ensure the infrastructure is designed and constructed to meet LIEC's high quality standards. It is anticipated that servicing of the first development under this servicing strategy will begin in 2021.

## District Energy Utility Service Areas

	<b>Buildings To-Date</b>	<b>Residential Units To-Date</b>	<b>Floor Area To-Date</b>	<b>Floor Area Build-out</b>
Alexandra District Energy Utility	10	1,736	1.9M ft <sup>2</sup>	4.4M ft <sup>2</sup>
Oval Village District Energy Utility	9	1,990	2.2M ft <sup>2</sup>	6.4M ft <sup>2</sup>
City Centre District Energy Utility	9 <sup>(1)</sup>	3,239 <sup>(1)</sup>	4.6M ft <sup>2</sup> ( <sup>1</sup> )	48M ft <sup>2</sup>

<sup>(1)</sup> Commitments secured from upcoming developments in the City Centre; first connection expected in 2021.



New distribution pipes being installed under Alexandra Park to allow for the future addition of new geo-exchange fields once the park is developed



Covered deck for public use at the Alexandra District Energy Utility Energy Centre

## ALEXANDRA DISTRICT ENERGY UTILITY

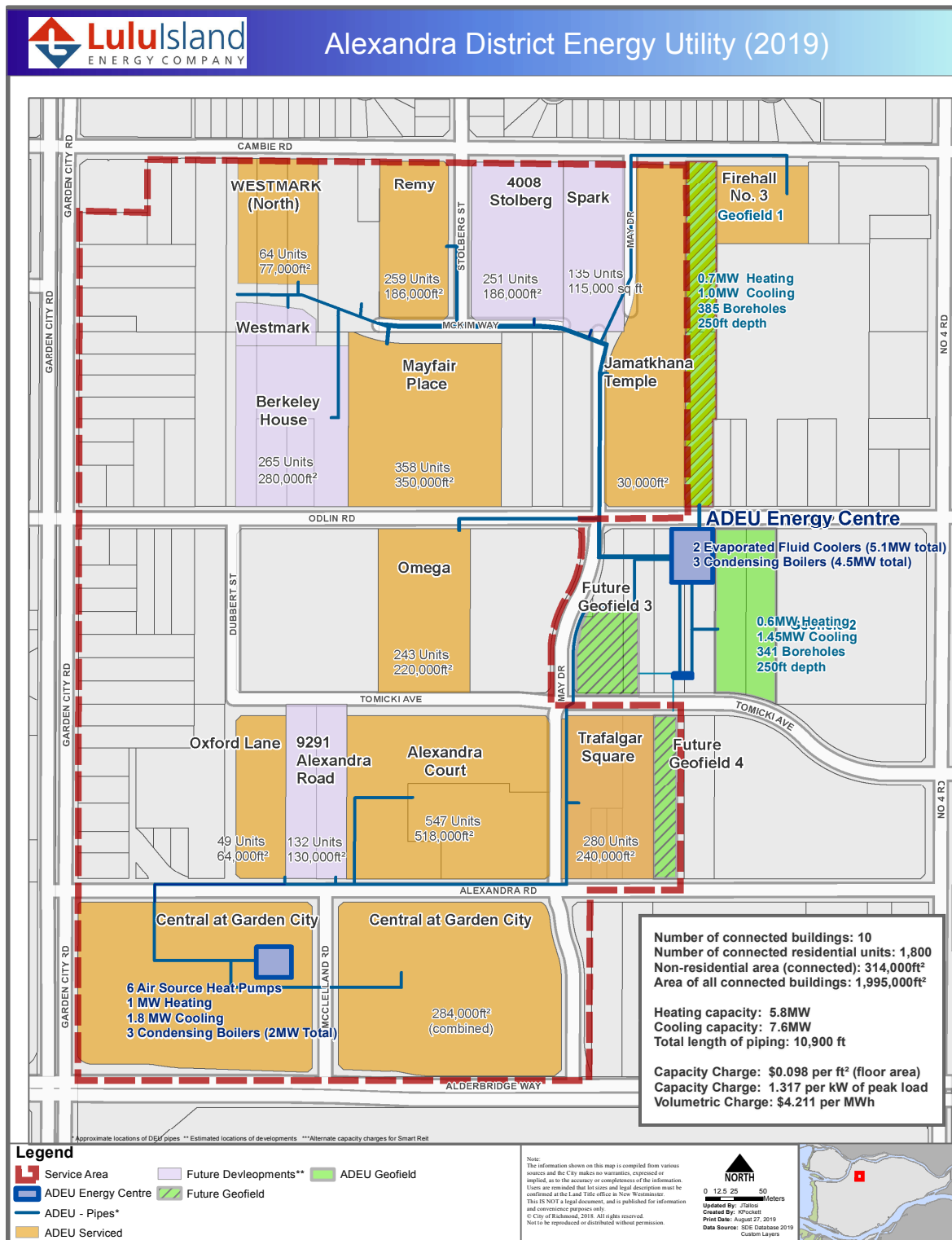
ADEU has been operating since 2012 as a sustainable energy system which provides a centralized energy source for heating, cooling and domestic hot water heating for residential and commercial customers located in the Alexandra/West Cambie neighbourhood. ADEU assists in meeting the community-wide greenhouse gas emission reduction targets adopted as part of Richmond’s Sustainability Framework by providing buildings with renewable low carbon energy through geo-exchange technology.

### Infrastructure Overview

<b>Energy Station</b>	9600 Odlin Road, Richmond, BC V6X 1C9 Satellite Energy Plant (Area A) — 4751 McClelland Road, Upper Parkade, Richmond, BC V6X 0M5
<b>Service</b>	Residential: Space heating, cooling and domestic hot water Commercial: Space heating and cooling
<b>Technology</b>	ADEU Phases 1 and 2 were commissioned in July 2012. The ADEU will potentially service up to 3100 residential units and 1.1 million sq. ft. of commercial uses at build out in approximately 10 to 15 years. Heating, cooling and domestic hot water are provided to connected residential buildings, and only heating and cooling for large commercial and institutional spaces through a hydronic (water) energy delivery system. In heating mode, ground source heat pump technology extracts heat (geothermal energy) from the ground via a network of vertical pipe loops. Built-in backup natural gas-fired boilers provide 100% back up in the event that the ground source heat pumps shut down or require maintenance. This system cools buildings as well. During the summer months, the energy flow is reversed and heat is extracted from buildings and pumped into the ground. In this way, energy that was extracted from the ground for heating buildings is “recharged” allowing heat to be available for the next cold season. Phase 3, completed in 2015 added heating and cooling capacity through the addition of a second geo-exchange field, two cooling towers and three boilers. Further, Phase 4 completed in 2016, brought the addition of a new satellite energy plant at the Central at Garden City (Smart Centres) commercial development. Located on the roof top parkade, this plant utilizes efficient air-source heat pump technology to provide space heating and cooling for the large commercial customers within the development. This new energy plant is also interconnected with the current ADEU energy plant allowing for energy sharing with the main ADEU distribution system. Individual buildings connected to the ADEU require smaller sized boilers for increasing the temperature of domestic hot water, reducing the overall cost of maintenance to buildings. The performance of the system is monitored continuously, providing a high level of reliability to customers.
<b>Length of Distribution Network</b>	3,660 m (12,000 ft.) of high-density polyethylene piping 726 vertical closed-loop boreholes, each 250 ft. deep



## Alexandra District Energy Utility Service Area Map



## Did you know?

ADEU enables building owners to conserve energy efficiency and improve operating efficiency, thus protecting the environment.

## Customers and Energy Rates

Customer energy rates are set in the City of Richmond Service Area Bylaws, which are enacted by City Council. This approach ensures transparency and accountability is maintained for all district energy projects in the City. The rate and bylaw provisions are reviewed and approved by Council on an annual basis.

Energy rates are set based on City Council's objective to provide customers with energy costs that are equal to or less than conventional system energy costs, based on the same level of service. In the absence of DE services, a typical building would have in-building equipment that would use a combination of natural gas and/or electricity and result in operational and maintenance expenses. This is the basis for comparing DE rate costs with conventional utility, energy and maintenance costs. DE customer rates in Richmond have met this requirement. As with other energy utilities, this rate includes utility costs related to infrastructure development, operation and maintenance, commodities (e.g. electricity and natural gas) and other administrative costs.

### 2019 Rate Structure

Each building includes one master meter. Strata corporations are billed on a quarterly basis, at a rate that is comprised of three charges:

- Capacity charge: Charge based on the gross square floor area of the building ( \$0.098 per sq. ft.)
- Peak Charge: Charge based on the annual peak heating load supplied by the ADEU to the building (\$1.317 per kW/month)
- Volumetric Charge: Charge based on the energy consumed by the building (\$4.211 per MWh)

### Buildings

Building Name	Use	Area (sq. ft.)
Remy – 4099 Stolberg Street	Residential	186,000
Mayfair Place – 9399 Odlin Road	Residential	351,000
Omega – 9333 Tomicki Avenue	Residential	222,000
Alexandra Court – 9399 Alexandra Road	Residential	518,000
Jamatkhana Temple – 4000 May Drive	Institutional	30,000
Oxford Lane – 4588 Dubbert Street	Residential	64,000
Trafalgar – 9500 Tomicki Avenue	Residential	262,000
Westmark (North) – 9200 McKim Way	Residential	85,310
Central at Garden City – Walmart – 9251 Alderbridge Way	Commercial	160,000



Building Name	Use	Area (sq. ft.)
Central at Garden City, Building A/B – 4751 McClelland Road	Commercial	124,000
City of Richmond Fire Hall #3 – 9660 Cambie Road	Commercial	24,995

### Customer Service

LIEC provides support 24 hours a day, 7 days a week for ADEU customers. Customers can contact customer service via a telephone hotline 1-844-852-5651.

### Energy and Greenhouse Gas Emissions (GHGs)

The driving forces behind the establishment of district energy systems in Richmond were to reduce GHG emissions that cause climate change, develop low carbon renewable energy systems and support local green jobs.

The amount of Energy delivered by the end of 2019 was 31,022 MWh. Greenhouse gas performance by the end of 2019 was 5,350 tonnes of CO<sub>2</sub>e avoided, equal to removing 1,600 cars from City of Richmond roads for one year.

### 2019 Financial Summary

The total net book value of ADEU capital asset to date is \$23.2 million. Revenue from ADEU customers has been gradually increasing in pace with the occupancy of serviced buildings and new connected buildings. Revenue from operations for 2019 is \$2,057,019 (2018 – \$1,820,981). Revenue increased by \$236,038, mainly due to additional energy use as a result of a new building connection.

Corix Utilities remains engaged as the system operator under contract, to perform functional verification ensuring continuous operation and fine tuning of the system. Total cost of sales (utilities, contract services, depreciation expenses) are \$1,189,606 (2018 – \$ 1,137,033). The increase of \$52,573 is mainly due to additional energy sales as a result of a new connected building.

In the context of a growing customer base, ADEU financial, operational and environmental results show the DEU is progressing as planned.





Oval Village District Energy Utility Interim Energy Centre (2020)

## ■ OVAL VILLAGE DISTRICT ENERGY UTILITY

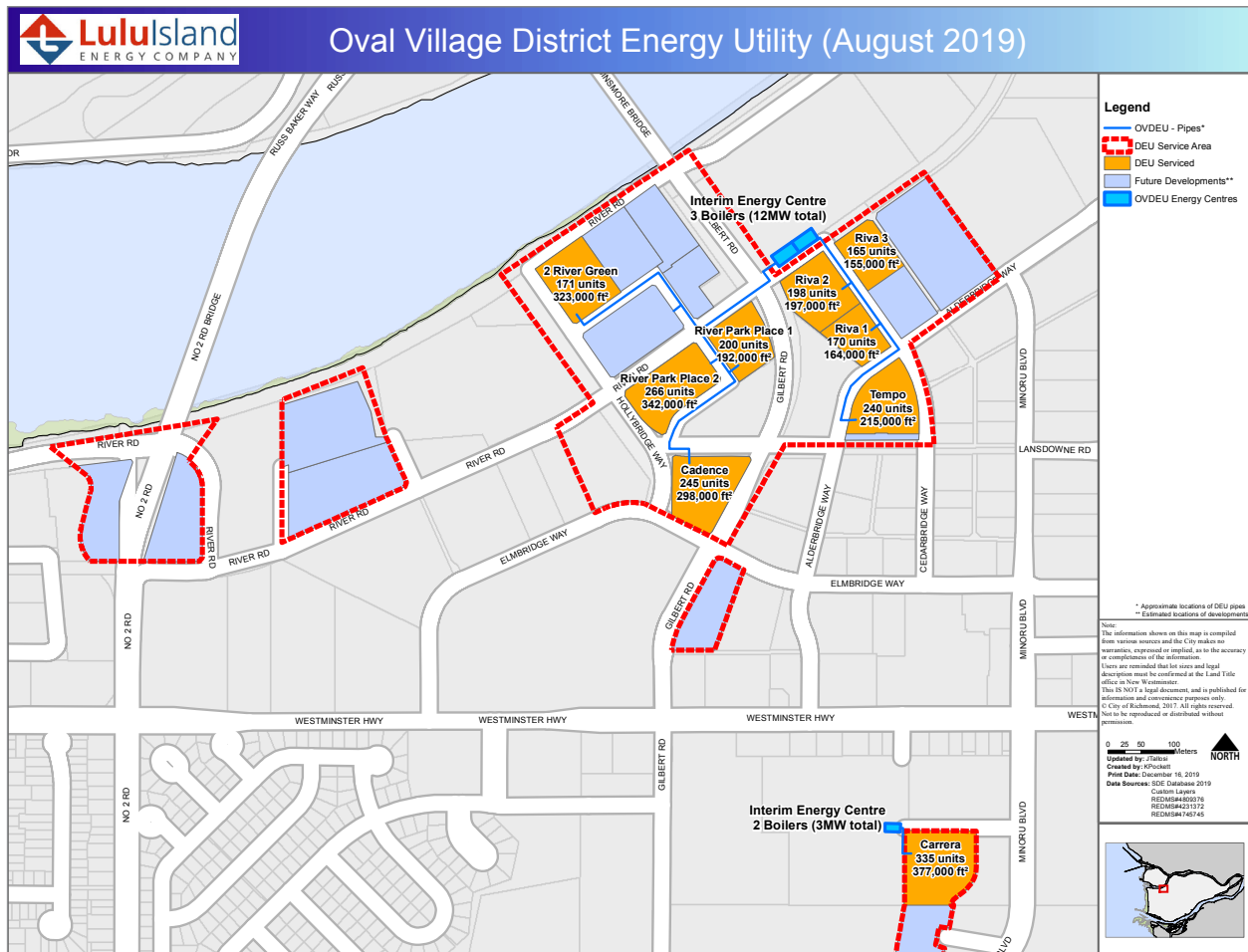
Over 1,990 residential units are receiving energy from the OVDEU. Space heating and domestic hot water heating energy is currently supplied from the two interim energy centres. When enough buildings are connected to the system, a permanent energy centre will be built which will produce low carbon energy, currently planned to be harnessed from the Gilbert Trunk sanitary force main sewer, currently planned in 2025. As with the ADEU, the OVDEU will assist in meeting the community-wide greenhouse gas emission reduction targets adopted as part of Richmond's Sustainability Framework by providing buildings with renewable low carbon energy.

A system overview and service map for the Oval Village District Energy Utility is shown below.

### Infrastructure Overview

<b>Energy Station</b>	Interim Energy Centre – 7011 River Parkway, Richmond, BC Interim Energy Centre – 6111 Bowling Green Road, Richmond, BC
<b>Service</b>	Residential: Space heating and domestic hot water heating
<b>Technology</b>	The OVDEU started operations in 2015, and currently services nine buildings with over 1,990 residential units and over 2.2 million sq. ft. At full build-out the OVDEU will potentially service up to 5,500 residential units and 6.4 million sq. ft. of floor space. Energy for space heating and domestic hot water is provided to connected buildings through a hydronic (water) energy delivery system. Energy generated at two interim energy centres provides 11MW of heating capacity to service these buildings. These interim energy centres currently use high efficiency natural gas boilers to produce energy. The performance of the system is monitored continuously, providing a high level of reliability to customers. These facilities will be in operation until there are enough buildings connected to the system to justify the costs of constructing a major energy plant that will extract heat from the Gilbert Trunk sanitary force main sewer, currently planned for operation in 2025.
<b>Length of Distribution Network</b>	1,200 m (3,900 ft.) insulated steel piping

## Oval Village District Energy Utility Service Area Map





## Customers and Energy Rates

Customer energy rates are defined in the City of Richmond's Service Area Bylaws, which are enacted by City Council. This approach ensures transparency and accountability is maintained for all DE projects in the City. The rate and bylaw provisions are reviewed and approved by Council on an annual basis.

Energy rates are established based on City Council's objective to provide customers with energy costs that are equal to or less than conventional system energy costs, based on the same level of service. In the absence of DE services, a typical building would have in-building equipment that would use a combination of natural gas and/or electricity and result in operational and maintenance expenses. This is referred to as a "business as usual" (BAU) scenario and is the basis for comparing DE rate costs with conventional utility, energy and maintenance costs. DE customer rates in Richmond have met this requirement. As with other energy utilities, this rate includes utility costs related to infrastructure development, operation and maintenance, commodities (e.g. electricity and natural gas) and other administrative costs such as staffing.

### 2019 Rate Structure

Each building includes one master meter. Strata corporations are billed on a quarterly basis, at a rate that is comprised of three charges:

- Capacity charge: Charge based on the gross square floor area of the building (\$0.0536 per sq. ft.)
- Volumetric Charge: Charge based on the energy consumed by the building (\$32.99 per MWh)

### Buildings

Building Name	Use	Area (sq. ft.)
Carrera – 7368 Gollner Avenue	Residential	377,404
Riva Building 1 – 5399 Cedarbridge Way	Residential	155,942
Riva Building 2 – 5311 Cedarbridge Way	Residential	196,967
River Park Place 1 – 6888 River Road	Residential/ Commercial	191,662
Cadence – 7468 Lansdowne Road	Residential/ Commercial	276,826
Tempo – 7688 Alderbridge Way	Residential	214,266
Riva Building 3 – 7008 River Parkway	Residential	155,829
ASPAC Lot 9 – 6611 Pearson Way	Residential	323,111
River Park Place 2 – 6899 Pearson Way	Residential/ Commercial	342,000

### Customer Service

LIEC provides support 24 hours a day, 7 days a week to OVDEU customers. Customers can contact customer service via a telephone hotline 1-844-852-5651.

### Energy and Greenhouse Gas Emissions (GHGs)

The amount of Energy delivered by the end of 2019 was 43,862 MWh. Greenhouse gas performance was 1,002 tonnes of CO<sub>2</sub>e avoided, equal to removing 216 cars from City of Richmond roads for one year. At full build-out, the OVDEU system is anticipated to annually reduce GHG emissions by almost 9,000 tonnes of CO<sub>2</sub> as compared to business as usual.

### 2019 Financial Summary

In October 2014, LIEC and Corix Utilities executed a Concession Agreement whereby LIEC would own the OVDEU infrastructure, and Corix would design, build, finance, operate and maintain OVDEU. Payments to Corix under the Concession Agreement are based on Corix's Annual Revenue Requirement, which is based on the utility cost of service rate-setting principles in British Columbia utilizing forward test years.

The total net book value of OVDEU capital asset to date is \$9.8 million. Revenue from OVDEU customers has been increasing in pace with the occupancy of serviced buildings and new connected buildings. Revenue from operations for 2019 is \$1,751,853 (2018-\$1,598,048). Revenue increased by \$153,805 compared to 2018. The increase was mainly due to additional energy use as a result of a new building connection.

The total estimated concession liability to finance the construction of the Oval Village District Energy Utility at full build out was \$38,686,000 in the Board approved 2020 capital plan. The concession liability will be accrued over time. The total concession liability balance outstanding as of December 31, 2019 is \$8,166,226.

In the context of a growing customer base, OVDEU financial, operational and environmental results show the DEU is progressing as planned.

### Did you know?

OVDEU efficiently meets the energy demands for nine buildings, in total, providing 43,862 MWh of energy by the end of 2019.



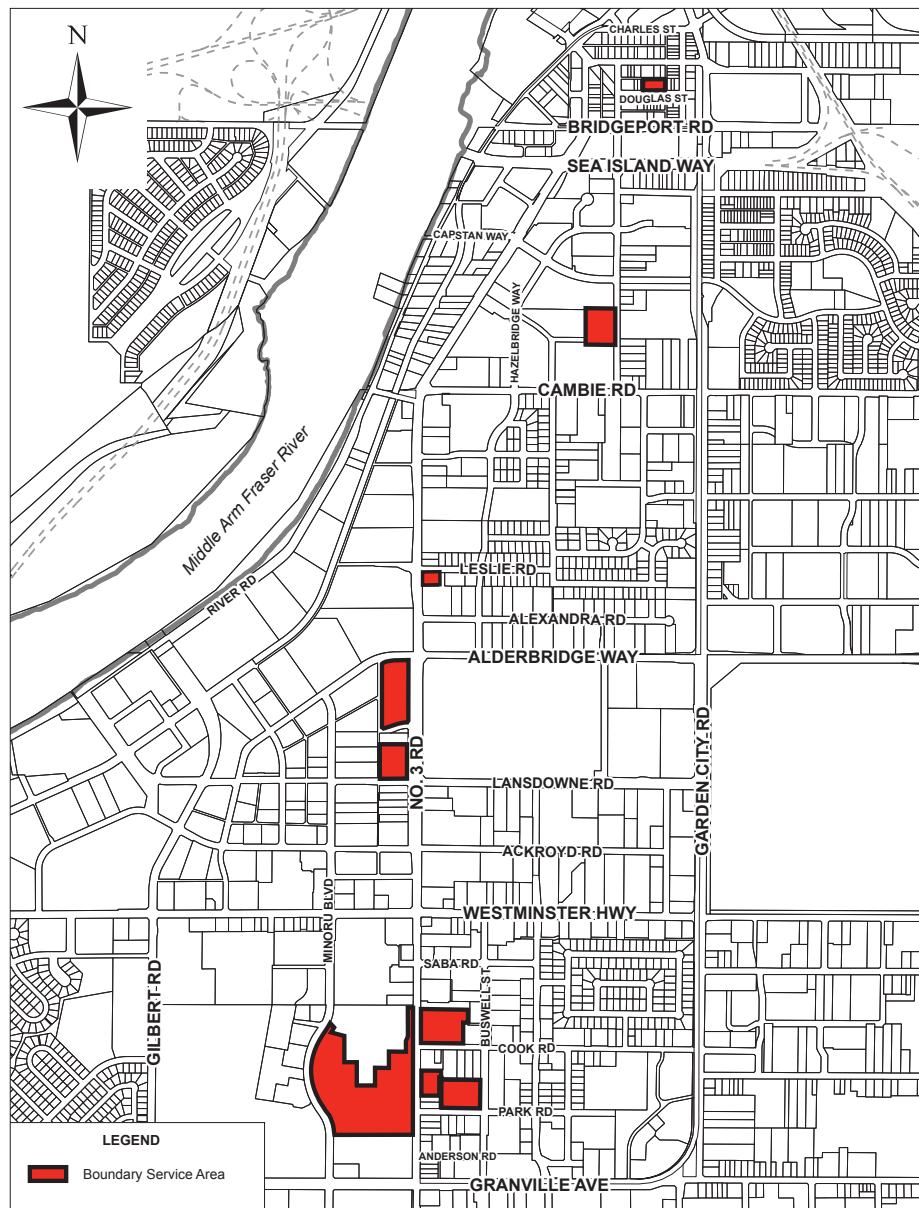
Rapid development taking place in Richmond's City Centre



## CITY CENTRE DISTRICT ENERGY UTILITY

While the City Centre DEU (CCDEU) due diligence process is in progress, Richmond established the City Centre DEU Bylaw No. 9895 to expand LIEC's customer base and enable immediate GHG emissions reductions. These new developments are building onsite low-carbon energy plants. In 2018, six developments have been incorporated into the Bylaw No. 9895 service area, amounting to approximately 4.29 million sq. ft. It is anticipated that operation of the first low carbon energy plants under this servicing strategy will begin in 2021.

### City Centre District Energy Utility Service Area Map



## APPENDIX A: AWARDS & RECOGNITION

Awarding Body	Award	Date	Comments
Association of Energy Engineers	<b>Canada Region Energy Project of the Year Award</b>	2019	The Association of Energy Engineers awards this to a project that takes a first-of-a-kind approach wherever it has been implemented.
Canadian Association of Municipal Administrators	<b>CAMA Awards of Excellence – Environment Award</b>	2019	This award recognizes the commitment of a municipality to environmentally sustainable governance, to protecting the environment and to combating climate change. Awards are granted to programs, projects or services that have made a significant and positive impact on the environment.
International District Energy Association	<b>Public Sector District Energy Leadership Award</b>	2018	This award recognized the commitment and vision shown by the City of Richmond's Council for its ongoing support for district energy in Richmond.
Association of Energy Engineers	<b>Canada Region Innovative Energy Project of the Year Award</b>	2018	This award recognized the ADEU Phase 4 expansion project for its innovative approach to service the Central at Garden City development using renewables and making a significant impact on climate change.
Association of Consulting Engineering Companies	<b>Canadian Consulting Engineering Award of Excellence</b>	2017	This award is the most prestigious mark of recognition in Canadian engineering and was given to the Alexandra District Energy Utility expansion project to connect the Central at Garden City development for its high quality of engineering, imagination and innovation.



Mayor Malcolm Brodie and LIEC District Energy Manager, Alen Postolka, upon being presented with the 2019 Canada Region Energy Project of the Year Award



<b>Awarding Body</b>	<b>Award</b>	<b>Date</b>	<b>Comments</b>
Association of Energy Engineers	<b>Canada Region Institutional Energy Management Award</b>	2017	The Canada Region Institutional Energy Management Award recognizes organizations and companies for their dedication and performance in the energy efficiency and renewable energy industry. This prestigious award recognizes the City for leading the way with its District Energy implementation program.
Canadian Wood Council	<b>UBCM Community Recognition Award</b>	2017	This award recognized the leadership in the use of wood, both architecturally and structurally, in the City's Alexandra District Energy Utility building constructed during the Phase 3 expansion. The building construction used local, innovative low carbon wood for structural elements as well as interior and exterior cladding.
International District Energy Association	<b>System of the Year</b>	2016	IDEA System of the Year is the highest honour IDEA can confer on a district energy system. It recognized the Alexandra District Energy Utility as an exemplary district energy system that provides high-level performance and service that further the goals of the district energy industry.
Union of British Columbia Municipalities	<b>Community Excellence Award</b>	2016	The Community Excellence Award recognized the City's district energy program for its exemplary leadership through policies, decision-making and actions that have made a difference for its residents.
Canadian Geo-Exchange Coalition	<b>Excellence Award</b>	2014	The Canadian Geo-exchange Coalition Excellence Award recognized the Alexandra District Energy Utility geothermal/geo-exchange system for its quality of installation and design.

<b>Awarding Body</b>	<b>Award</b>	<b>Date</b>	<b>Comments</b>
Association of Professional Engineers and Geoscientists of British Columbia (APEGBC)	<b>Sustainability Award</b>	2014	APEGBC's Sustainability Award was created to recognize the important contribution that engineering and geoscience make to the well being of human life and ecosystems on which we all depend, and was awarded in recognition of the Alexandra District Energy system.
Canadian Consulting Engineer Magazine & the Association of Consulting Engineering Companies – Canada	<b>Award of Excellence</b> (Natural Resources, Mining, Industry and Energy Category)	2013	This award is the most prestigious mark of recognition in Canadian engineering and was given to the Alexandra District Energy Utility project for its high quality of engineering, imagination and innovation.
Public Works Association of British Columbia	<b>Project of the Year</b>	2013	This award is given to a municipality that constructs a major and complex public works or utilities project that meets specific criteria including innovative design with project benefits for the community and environment. It was awarded to the City in recognition of the Alexandra District Energy system
International District Energy Association	<b>Certificate of Recognition–Innovation Awards</b>	2013	This program highlighted the Alexandra District Energy System as an example of engineering, technology and operational innovation within the district energy industry.
ENERGY GLOBE Foundation	<b>Canadian Energy Globe National Award</b>	2013	The national ENERGY GLOBE Award distinguished the Alexandra District Energy Utility as the best national project for its focus on energy efficiency, renewable energy and the conservation of resources.



## ■ APPENDIX B: MANAGEMENT'S DISCUSSION AND ANALYSIS

### About the Company

LIEC, a corporation wholly-owned by the City of Richmond, was established to provide district energy services on behalf of the City to reduce community GHG emissions in Richmond. Under direction from Council, and following receipt of the necessary approval from the Inspector of Municipalities, the incorporation of LIEC was completed in August 2013.

In June 2014, the City and LIEC executed a District Energy Utilities Agreement, assigning LIEC the function of establishing and operating district energy systems as well as providing thermal energy services on behalf of the City. LIEC currently owns and operates the Alexandra District Energy Utility (ADEU), Oval Village District Energy Utility (OVDEU), and continues to advance new district energy opportunities such as City Centre District Energy Utility (CCDEU). All capital and operating costs are recovered through revenue from meter billings, ensuring that the business is financially self-sustaining.

ADEU provides heating and cooling services to residential and commercial buildings in the ADEU service area, comprising over 1,735 residential units and over 1.9 million square feet of serviced floor area. While some electricity is consumed for pumping and equipment operations, nearly 100% of this energy is renewable. This energy is produced locally from geo-exchange fields in the greenway corridor and West Cambie Park, as well as highly efficient air-source heat pumps.

The OVDEU system is managed through a 30-year concession agreement where Corix Utilities Inc. (Corix) designs, builds, finances, and maintains infrastructure with LIEC maintaining the ownership of the utility. There are nine residential buildings connected to the OVDEU system with over 1,990 residential units and 2.2 million square feet of floor area receiving energy from the utility. 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 (est. 2025), a permanent energy centre will be built which will harness low carbon energy from the Gilbert Trunk sanitary force main sewer.

While the City Centre DEU (CCDEU) due diligence process has been finalized, LIEC and City staff collaborated to develop the CCDEU service area to expand LIEC's customer base and enable immediate GHG emissions reductions in the City Centre area. In 2019, nine developments were incorporated into the service area, amounting to approximately 4.6 million square feet. It is anticipated that servicing of the first development under this servicing strategy will begin in 2021.

### Financial Summary

As a Government Business Enterprise (GBE), LIEC's financial statements have been prepared in accordance with International Financial Reporting Standards (IFRS).

LIEC's overall financial position improved by \$3,342,162 in 2019 with total assets of \$46,541,106 (2018-\$43,198,944). Total assets are comprised of current assets (cash, investments, and receivables) totaling \$13,128,722 (2018-\$10,838,195) and non-current assets (plant and equipment) of \$33,412,384 (2018-\$32,360,749). The current assets increased by \$2,290,527 mainly due to income generated from operations and advanced payments from developers for future building connections.

LIEC's liabilities consist of accounts payables, deferred contributions and concession liabilities. The deferred developers' contributions are recovering the cost of the service connection, including installation of the energy transfer station infrastructure. The concession liabilities are linked to the 30 year concession agreement, which represent the anticipated cash outflow for future obligations under the agreement for the capital and operating costs of the assets.

The shareholder's equity represents the net worth of the company. In 2019, LIEC's shareholder equity is \$31,414,163 (2018-\$29,779,765), which indicates that the company's value has increased by \$1,634,198, showing good financial health of the company.

The revenue consists of district energy services and metered billings which reflect the full year energy sales based on the actual customers' energy usage and consumption. The revenue increased by \$417,870 to \$4,771,113 (2018 – \$4,353,243), mainly due to new building connections. Overall, 2019 actual revenue is in line with the projected revenue.

The cost of sales includes contract services, utilities (electricity and natural gas) and amortization expenses. The total cost of sales increased by \$120,193 to \$2,294,373 (2018 – \$2,174,180) due to more energy sales to customers. Comparing with the 2019 operating budget, the contract expense is below the budget by 31% mainly due to less unscheduled repairs and maintenance. The utility expenses are below the budget by 22%, mainly due to timing of new building connections and moderate weather conditions.

The general and administration expenses are expenditures that LIEC incurs to engage in business development activities and includes salaries and benefits, administration expenses, insurance, professional fees. The administration expense includes a fee of \$61,417 (2018 – \$59,758), paid by LIEC to the City of Richmond for the support provided by the City. The increase of salaries and benefits is due to the accrual of post-employment obligations, fringe benefits as a result of the new Employer Health Tax, and the addition of a new employee. The post-employment obligation expense is new for this year. Every three years a comprehensive evaluation of post-employment obligation is performed by a third party; the last evaluation was performed in 2016. The increase amount of post-employment obligation for 2019 is \$89,985, which is mainly due to the growth of the company and additional employees since 2016. The Employer Health Tax of \$14,665 is also a new cost for this fiscal year. The insurance premium is higher due to a general insurance rate increase and the additional capital assets being insured. Overall, general and administration expenses as a percentage of revenues are in line with the budget.

Overall, LIEC's revenues exceeded expenses resulting in a net income of \$1,634,398 (2018 – \$1,490,632). The net income as a percentage of revenue is 34% for both years. Compared to 2018, the net income has increased by \$143,766 showing positive financial results of operations.

LIEC's financial sustainability and future growth must be taken into consideration when reviewing its financial results. LIEC's success is dependent upon developing in-house expertise and securing funds for future capital replacements as existing infrastructure components reach their end of life. Other important factors include the planning of future projects, which consists of research and development, and exploratory reviews of future technology and opportunities. The net income will be set aside in LIEC's equity for future capital infrastructure projects, and to ensure long term rate stability for rate payers.



## ■ APPENDIX C: FINANCIAL STATEMENTS OF LULU ISLAND ENERGY COMPANY LTD.

**Period of incorporation on  
January 1, 2019 to December 31, 2019**



KPMG LLP  
 Metro Tower I  
 4710 Kingsway, Suite 2401  
 Burnaby BC V5H 4M2  
 Canada  
 Telephone (604) 527-3600  
 Fax (604) 527-3636

## INDEPENDENT AUDITORS' REPORT

To the Board of Directors of the City of Richmond

### **Opinion**

We have audited the financial statements of Lulu Island Energy Company Ltd. (the Entity), which comprise:

- the statement of financial position as at December 31, 2019
- the statement of net income and other comprehensive income for the year then ended
- the statement of changes in equity for the year then ended
- the statement of cash flows for the year then ended
- and notes to the financial statements, including a summary of significant accounting policies

(Hereinafter referred to as the “financial statements”).

In our opinion, the accompanying financial statements present fairly, in all material respects, the financial position of the Entity as at December 31, 2019, and its financial performance and its cash flows for the year then ended in accordance with International Financial Reporting Standards (IFRS).

### **Basis for Opinion**

We conducted our audit in accordance with Canadian generally accepted auditing standards. Our responsibilities under those standards are further described in the “**Auditors’ Responsibilities for the Audit of the Financial Statements**” section of our auditors’ report.

We are independent of the Entity in accordance with the ethical requirements that are relevant to our audit of the financial statements in Canada and we have fulfilled our other responsibilities in accordance with these requirements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

KPMG LLP is a Canadian limited liability partnership and a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative (“KPMG International”), a Swiss entity. KPMG Canada provides services to KPMG LLP.





Lulu Island Energy Company Ltd.  
Page 2

### ***Responsibilities of Management and Those Charged with Governance for the Financial Statements***

Management is responsible for the preparation and fair presentation of the financial statements in accordance with International Financial Reporting Standards (IFRS), and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Entity's ability to continue as a going concern, disclosing as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Entity or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Entity's financial reporting process.

### ***Auditors' Responsibilities for the Audit of the Financial Statements***

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Canadian generally accepted auditing standards will always detect a material misstatement when it exists.

Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements.

As part of an audit in accordance with Canadian generally accepted auditing standards, we exercise professional judgment and maintain professional skepticism throughout the audit.

We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion.

The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Entity's internal control.



Lulu Island Energy Company Ltd.  
Page 3

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Entity's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditors' report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditors' report. However, future events or conditions may cause the Entity to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

A handwritten signature in black ink that reads 'KPMG LLP' with a horizontal line underneath.

Chartered Professional Accountants

Burnaby, Canada  
April 1, 2020

# LULU ISLAND ENERGY COMPANY LTD.

## Statement of Financial Position

December 31, 2019, with comparative information for 2018

	2019	2018
<b>Assets</b>		
Current assets:		
Cash and cash equivalents	\$ 6,233,102	\$ 1,640,019
Accounts receivable (note 6)	1,302,697	2,242,644
Investments (note 7)	5,592,923	6,955,532
	13,128,722	10,838,195
Non-current assets:		
Plant and equipment (note 8)	33,412,384	32,360,749
	\$ 46,541,106	\$ 43,198,944
<b>Liabilities and Shareholder's Equity</b>		
Current liabilities:		
Accounts payable and accrued liabilities	\$ 777,492	\$ 414,437
Current portion of deferred developer contributions (note 9)	322,307	106,761
Current portion of concession liability (note 10)	2,321,782	1,401,328
	3,421,581	1,922,526
Non-current liabilities:		
Deferred developer contributions (note 9)	5,860,917	5,267,876
Concession liability (note 10)	5,844,444	6,228,776
	11,705,361	11,496,652
Shareholder's equity:		
Share capital and contributed surplus (note 13)	27,397,115	27,397,115
Retained earnings	4,017,049	2,382,651
	31,414,164	29,779,766
	\$ 46,541,106	\$ 43,198,944

See accompanying notes to financial statements.

Approved on behalf of the Board:



Director

DocuSigned by:



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Director



# LULU ISLAND ENERGY COMPANY LTD.

## Statement of Net Income and Other Comprehensive Income

Year ended December 31, 2019, with comparative information for 2018

	2019	2018
Revenue (note 13)	\$ 4,771,113	\$ 4,353,243
Cost of sales:		
Operating expenses	1,218,276	1,128,952
Depreciation	1,076,097	1,045,228
	2,294,373	2,174,180
Gross profit	2,476,740	2,179,063
General and administrative expenses	930,689	803,121
Net income before undernoted items	1,546,051	1,375,942
Developer contributions, other income and net finance cost:		
Developer contributions (note 9)	119,764	106,761
Other income (note 13)	156,740	151,083
Net finance cost (note 5)	(188,157)	(143,154)
	88,347	114,690
Net income and comprehensive income	\$ 1,634,398	\$ 1,490,632

See accompanying notes to financial statements.

## LULU ISLAND ENERGY COMPANY LTD.

### Statement of Changes in Equity

Year ended December 31, 2019, with comparative information for 2018

	Share capital	Contributed surplus	Retained earnings	Shareholder's equity
Balance, January 1, 2018	\$ 5	\$ 27,397,110	\$ 892,019	\$ 28,289,134
Net income and comprehensive income	-	-	1,490,632	1,490,632
Balance, December 31, 2018	5	27,397,110	2,382,651	29,779,766
Net income and comprehensive income	-	-	1,634,398	1,634,398
Balance, December 31, 2019	\$ 5	\$ 27,397,110	\$ 4,017,049	\$ 31,414,164

See accompanying notes to financial statements.

# LULU ISLAND ENERGY COMPANY LTD.

## Statement of Cash Flows

Year ended December 31, 2019, with comparative information for 2018

	2019	2018
Cash provided by (used in):		
Operations:		
Net income	\$ 1,634,398	\$ 1,490,632
Adjustments for:		
Depreciation	1,076,097	1,045,228
Recognition of deferred contributions	(119,764)	(106,761)
Finance expense on concession liability	435,608	420,009
Changes in non-cash working capital:		
Accounts receivable	939,947	(754,727)
Accounts payable and accrued liabilities	363,055	157,855
Deferred developer contributions	928,351	1,852,960
Net change in cash from operating activities	5,257,692	4,105,196
Investments:		
Additions to plant and equipment	(1,429,609)	(1,065,437)
Change in investments	1,362,609	(1,438,794)
Net change in cash from investing activities	(67,000)	(2,504,231)
Financing:		
Concession liability (note 10)	(597,609)	(671,721)
Net change in cash from financing activities	(597,609)	(671,721)
Net change in cash	4,593,083	929,244
Cash and cash equivalents, beginning of year	1,640,019	710,775
Cash and cash equivalents, end of year	\$ 6,233,102	\$ 1,640,019

See accompanying notes to financial statements.



# LULU ISLAND ENERGY COMPANY LTD.

## Notes to Financial Statements

Year ended December 31, 2019

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### 1. Incorporation and nature of business:

The Lulu Island Energy Company Ltd. (the "Company") was incorporated on August 19, 2013 under the Business Corporations Act of British Columbia as a municipal corporation wholly-owned by the City of Richmond (the "City"). The address of the Company's registered office is 6911 No. 3 Road, Richmond, British Columbia, V6Y 2C1.

The business of the Company is to develop, manage and operate district energy utilities in the City, including, but not limited to, energy production, generation or exchange, transmission, distribution, maintenance, marketing and sale to customers, customer service, profit generation and financial management. The Company also provides advisory services for energy and infrastructure.

### 2. Basis of presentation:

#### (a) Statement of compliance:

The financial statements have been prepared in accordance with International Financial Reporting Standards ("IFRSs") as issued by the International Accounting Standards Board ("IASB").

The financial statements were approved and authorized for issue by the Board of Directors April 1, 2020.

#### (b) Basis of measurement:

The financial statements have been prepared on the historical cost basis and on a going concern basis.

#### (c) Presentation of financial statements:

The Company uses a classified statement of financial position. The statement of financial position distinguishes between current and non-current assets and liabilities. Current assets and liabilities are those expected to be recovered within twelve months from the reporting date and non-current assets and liabilities are those where the recovery is expected to occur more than twelve months from the reporting date. The Company classifies the statement of comprehensive income using the function of expense method, which classifies expenses according to their functions, such as cost of sales and general and administrative expenses.

#### (d) Functional and presentation currency:

The financial statements are presented in Canadian dollars, which is the Company's functional currency.

# LULU ISLAND ENERGY COMPANY LTD.

Notes to Financial Statements (continued)

Year ended December 31, 2019

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## 2. Basis of presentation (continued):

### (e) Use of estimates and judgments:

The preparation of financial statements in conformity with IFRS requires management to make estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, income and expenses. Actual results may differ from these estimates.

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the period in which the estimates are revised and in any future periods affected.

Information about critical judgments in applying accounting policies that have the most significant effect on the amounts recognized in the financial statements is included in the following notes:

Note 9 - recognition of deferred developer contributions

Information about assumptions and estimation uncertainties that have a significant risk of resulting in a material adjustment within the next financial year are included in the following notes:

Note 8 - useful lives of plant and equipment

Note 12 - determination of the future minimum obligations and commitments for the concession liability.

## 3. Significant accounting policies:

The accounting policies set out below have been applied consistently to all years presented in these financial statements, unless otherwise indicated.

### (a) Plant and equipment:

#### (i) Recognition and measurement:

Plant and equipment are measured at cost less accumulated depreciation and accumulated impairment losses.

Cost includes amounts that are directly attributable to acquisition, construction, development, or betterment of the asset. The cost of self-constructed assets include the cost of materials and direct labor, any other costs directly attributable to bringing the assets to a working condition for their intended use and borrowing costs on qualifying assets.

# LULU ISLAND ENERGY COMPANY LTD.

Notes to Financial Statements (continued)

Year ended December 31, 2019

## 3. Significant accounting policies (continued):

### (a) Plant and equipment (continued):

#### (i) Recognition and measurement (continued):

Purchased software that is integral to the functionality of the related equipment is capitalized as part of that equipment.

When parts of an item of plant and equipment have different useful lives, they are accounted for as separate items (major components) of plant and equipment.

Gains and losses on disposal of an item of plant and equipment are determined by comparing the proceeds from disposal with the carrying amount of plant and equipment, and are recognized net within other income in profit and loss.

#### (ii) Subsequent costs:

The cost of replacing a part of an item of plant and equipment is recognized in the carrying amount of the item if it is probable that the future economic benefits embodied within the part will flow to the Company, and its cost can be measured reliably. The carrying amount of the replaced part is derecognized. The cost of the day-to-day servicing of plant and equipment are recognized in profit or loss as incurred.

#### (iii) Depreciation:

Depreciation is calculated over the depreciable amount, which is the cost of an asset less its residual value.

Depreciation of plant and equipment commences when the asset is deemed available for use and is recognized in profit and loss on a straight-line basis over the estimated useful lives of each part of an item of plant and equipment as follows:

Asset	Useful life - years
Energy plant center	75
Distribution piping	50
General equipment	25

Depreciation methods, useful lives and residual values are reviewed at each financial year end and adjusted if appropriate.



# LULU ISLAND ENERGY COMPANY LTD.

Notes to Financial Statements (continued)

Year ended December 31, 2019

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## 3. Significant accounting policies (continued):

### (b) Revenue recognition:

The Company recognizes revenue for the provision of energy and supply of other services. Revenue for the provision of energy is based on meter readings and is billed on a cyclical basis. Revenue is accrued for energy delivered but not yet billed. Revenue for other services is recognized upon completion of service. Revenue is recognized to the extent that it is probable that the economic benefits will flow to the Company and the revenue can be reliably measured, regardless of when payment is made. Revenue is measured at the fair value of the consideration received or receivable.

### (c) Public-private partnership project:

Public-private partnership ("P3") projects are delivered by private sector partners selected to design, build, finance, and maintain the assets. The cost of the assets under construction are recorded at cost, based on construction progress billings and also includes other costs, if any, incurred directly by the Company.

When deemed available for use, the project assets are amortized over their estimated useful lives. An obligation for the cost of capital and financing received to date, net of repayments, is recorded under concession liabilities (note 10).

### (d) Income taxes:

Under Section 149(1) (d) of the Income Tax Act, the Company is exempt from income and capital taxes by virtue of the fact that it is a wholly owned subsidiary of the City. Accordingly, no provision for such taxes has been made in financial statements.

### (e) Cash and cash equivalents:

Cash and cash equivalents comprise cash balances and call deposits with original maturities of three months or less. At December 31, 2019 and 2018, all cash and cash equivalents related to cash balances.

### (f) Finance income and finance cost:

Finance income comprises interest on funds invested. Interest income is recognized as it accrues in profit or loss, using the effective interest method.

Finance costs comprise interest expense on borrowings and impairment losses recognized on financial assets. Borrowing costs that are not directly attributable to the acquisition, construction or production of a qualifying asset are recognized in profit or loss using the effective interest method.

# LULU ISLAND ENERGY COMPANY LTD.

Notes to Financial Statements (continued)

Year ended December 31, 2019

## 3. Significant accounting policies (continued):

### (g) Financial instruments:

#### (i) Classification and measurement of financial assets and financial liabilities:

Under IFRS 9, *Financial Instruments* (IFRS 9), on initial recognition, a financial asset is classified as measured at: amortized cost, fair value through other comprehensive income ("FVOCI") - debt instrument, FVOCI - equity instrument, or fair value through profit or loss ("FVTPL"). The classification of financial assets under IFRS 9 is generally based on the business model in which a financial asset is managed and its contractual cash flow characteristics.

A financial asset is measured at amortized cost if it meets both of the following conditions and is not designated as FVTPL: it is held within a business model whose objective is to hold assets to collect contractual cash flows; and its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

A debt investment is measured at FVOCI if it meets both of the following conditions and is not designated as FVTPL:

- it is held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets; and
- its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

On initial recognition of an equity investment that is not held for trading, the Company may irrevocably elect to present subsequent changes in the investment's fair value in OCI. This election is made on an investment-by-investment basis.

All financial assets not classified as measured at amortized cost or FVOCI as described above are measured at FVTPL. On initial recognition, the Company may irrevocably designate a financial asset that otherwise meets the requirements to be measured at amortized cost or at FVOCI as at FVTPL if doing so eliminates or significantly reduces an accounting mismatch that would otherwise arise.

A financial asset (unless it is a trade receivable without a significant financing component that is initially measured at the transaction price) is initially measured at fair value plus, for an item not at FVTPL, transaction costs that are directly attributable to its acquisition.

# LULU ISLAND ENERGY COMPANY LTD.

Notes to Financial Statements (continued)

Year ended December 31, 2019

## 3. Significant accounting policies (continued):

### (g) Financial instruments (continued):

#### (i) Classification and measurement of financial assets and financial liabilities (continued):

The following accounting policies apply to subsequent measurement of financial assets:

- Financial assets at FVTPL: these assets are subsequently measured at fair value. Net gains and losses, including any interest or dividend income, are recognized in profit or loss.
- Financial assets at amortized cost: these assets are subsequently measured at amortized costs using the effective interest method. The amortized cost is reduced by impairment losses (see note 3(h)(i)). Interest income and impairment are recognized in profit or loss. Any gain or loss on derecognition is recognized in profit or loss.
- Debt investments at FVOCI: these assets are subsequently measured at fair value. Interest income calculated using the effective interest method and impairment are recognized in profit or loss. Other net gains are recognized in OCI. On derecognition, gains and losses accumulated in OCI are reclassified to profit or loss.
- Equity investments at FVOCI: these assets are subsequently measured at fair value. Dividends are recognized as income in profit or loss unless the dividend clearly represents a recovery of part of the cost of the investment. Other net gains and losses are recognized in OCI and are never reclassified to profit or loss.

Financial liabilities are recognized at amortized cost. Subsequent to initial recognition financial liabilities are measured at amortized cost using the effective interest method.

The following table shows the measurement categories for each class of the Company's financial assets and financial liabilities:

#### Financial assets

Cash and cash equivalents	Amortized cost
Accounts receivable	Amortized cost
Investments	Amortized cost

#### Financial liabilities

Accounts payable and accrued liabilities	Amortized cost
Concession liability	Amortized cost



# LULU ISLAND ENERGY COMPANY LTD.

Notes to Financial Statements (continued)

Year ended December 31, 2019

## 3. Significant accounting policies (continued):

### (g) Financial instruments (continued):

#### (ii) Measurement categories:

The following table shows the carrying values of assets and liabilities for each of these categories at December 31, 2019, and 2018. Unless otherwise noted, the fair values on the instruments approximate their carrying amount due to their short-term nature and / or due to application of market rates of interest.

	2019	2018
<b>Financial Assets:</b>		
Financial assets at amortized cost:		
Cash and cash equivalents	\$ 6,233,102	\$ 1,640,019
Accounts receivable	1,302,697	2,242,644
Investments	5,592,923	6,955,532
	<b>\$ 13,128,722</b>	<b>\$ 10,838,195</b>
<b>Financial Liabilities:</b>		
Financial liabilities at amortized cost:		
Accounts payable and accrued liabilities	\$ 777,492	\$ 414,437
Concession liability	8,166,226	7,630,104
	<b>\$ 8,943,718</b>	<b>\$ 8,044,541</b>

### (h) Impairment:

#### (i) Financial assets:

The 'expected credit loss' ("ECL") impairment model applies to financial assets measured at amortized cost, contract assets and debt investments at FVOCI, but not to investments in equity instruments.

The financial assets at amortized cost consist of cash and cash equivalents, accounts receivable and investments.

Under IFRS 9, loss allowances are measured on either of the following bases:

- 12-month ECLs: these are ECLs that result from possible default events within the 12 months after the reporting date; and
- Lifetime EFLs: these are ECLs that result from all possible default events over the expected life of a financial instrument.

# LULU ISLAND ENERGY COMPANY LTD.

Notes to Financial Statements (continued)

Year ended December 31, 2019

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## 3. Significant accounting policies (continued):

### (h) Impairment (continued):

#### (i) Financial assets (continued):

The Company measures loss allowances at an amount equal to lifetime ECLs. The Company has elected to measure loss allowances for trade receivables and due from the City at an amount equal to lifetime ECLs.

Measurement of ECLs are a probability-weighted estimate of credit losses. Credit losses are measured as the present value of all cash shortfalls (i.e. the difference between the cash flows due to the entity in accordance with the contract and the cash flows that the Company expects to receive).

#### (ii) Non-financial assets:

The carrying amounts of the Company's non-financial assets are reviewed at each reporting date to determine whether there is any indication of impairment. If any such indication exists, then the asset's recoverable amount is estimated.

The recoverable amount of an asset or cash-generating unit is the greater of its value in use and its fair value less costs to sell. In assessing value in use, the estimated future cash flows are discounted to their present value using a discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. For the purpose of impairment testing, assets that cannot be tested individually are grouped together into the smallest group of assets that generates cash inflows from continuing use that are largely independent of the cash inflows of other assets or groups of assets (the "cash-generating unit, or CGU").

An impairment loss is recognized if the carrying amount of an asset or its CGU exceeds its estimated recoverable amount. Impairment losses are recognized in profit or loss.

An impairment loss is reversed if there has been a change in the estimates used to determine the recoverable amount. An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortization, if no impairment loss had been recognized.

#### (i) Pension benefits:

The Company and its employees participate in the Municipal Pension Plan, a multi-employer defined benefit plan. Defined contribution plan accounting is applied to this plan because separate information for the Company is unable to be provided to apply defined benefit accounting. The expenses associated with this plan are equal to the actual contributions required by the Company during the reporting period.

# LULU ISLAND ENERGY COMPANY LTD.

Notes to Financial Statements (continued)

Year ended December 31, 2019

## 3. Significant accounting policies (continued):

### (j) Standards issued and effective:

#### *IFRS 16 Leases:*

The Company adopted IFRS 16 Leases on January 1, 2019, replacing IAS 17 Leases. The adoption of IFRS 16 Leases had no impact on the financial statements.

### (k) Standards issued but not yet effective:

A number of new standards are effective for annual periods beginning after January 1, 2020 and earlier application is permitted; however the Company has not early adopted the new or amended standards in preparing these financial statements.

The following amended standards and interpretations are not expected to have a significant impact on the financial statements;

- Amendments to references to conceptual framework in IFRS standards
- Definition of a business (Amendments to IFRS 3)
- Definition of material (Amendments to IAS 1 and IAS 8)
- IFRS 17 Insurance contracts

## 4. Personnel expenses:

	2019	2018
Wages and salaries	\$ 655,230	\$ 611,625
Other payroll expenses	89,985	3,713
	<b>\$ 745,215</b>	<b>\$ 615,338</b>

## 5. Net finance cost:

	2019	2018
Finance income:		
Investment interest	\$ 171,801	\$ 149,435
Bank interest	74,663	29,520
Other	987	97,900
	<b>247,451</b>	<b>276,855</b>
Finance cost:		
Finance expense on concession liability (note 10)	(435,608)	(420,009)
Net finance cost	<b>\$ (188,157)</b>	<b>\$ (143,154)</b>



# LULU ISLAND ENERGY COMPANY LTD.

Notes to Financial Statements (continued)

Year ended December 31, 2019

## 6. Accounts receivable:

	2019	2018
Trade receivables	\$ 244,706	\$ 1,375,799
Unbilled trade receivables	1,057,991	852,840
Sales tax receivable	-	14,005
	<u>\$ 1,302,697</u>	<u>\$ 2,242,644</u>

## 7. Investments:

Investments represent cash term deposits as follows:

Purchase date	Maturity date (interest rate)	2019
Feb 26, 2019	Feb 25, 2020 (3.15%)	\$ 311,594
May 13, 2019	May 12, 2020 (2.75%)	2,129,752
Aug 23, 2019	Aug 22, 2020 (2.60%)	1,557,036
Nov 28, 2019	Nov 28, 2020 (2.60%)	1,594,541
		<u>\$ 5,592,923</u>

## 8. Plant and equipment:

	Energy plant center	General equipment	Distribution piping	Total
<i>Cost:</i>				
Balance as at January 1, 2018	\$ 5,031,915	\$ 20,746,550	\$ 7,559,784	\$ 33,338,249
Additions	-	764,247	608,942	1,373,189
Balance as at December 31, 2018	5,031,915	21,510,797	8,168,726	34,711,438
Additions	-	908,487	1,219,245	2,127,732
Balance as at December 31, 2019	<u>\$ 5,031,915</u>	<u>\$ 22,419,284</u>	<u>\$ 9,387,971</u>	<u>\$ 36,839,170</u>
<i>Accumulated depreciation:</i>				
Balance as at January 1, 2018	\$ 67,092	\$ 1,050,139	\$ 188,230	\$ 1,305,461
Depreciation	67,092	828,882	149,254	1,045,228
Balance as at December 31, 2018	134,184	1,879,021	337,484	2,350,689
Depreciation	67,092	843,352	165,653	1,076,097
Balance as at December 31, 2019	<u>\$ 201,276</u>	<u>\$ 2,722,373</u>	<u>\$ 503,137</u>	<u>\$ 3,426,786</u>
<i>Net book value:</i>				
At January 1, 2018	\$ 4,964,823	\$ 19,696,411	\$ 7,371,554	\$ 32,032,788
At December 31, 2018	4,897,731	19,631,776	7,831,242	32,360,749
At December 31, 2019	<u>4,830,639</u>	<u>19,696,911</u>	<u>8,884,834</u>	<u>33,412,384</u>

# LULU ISLAND ENERGY COMPANY LTD.

Notes to Financial Statements (continued)

Year ended December 31, 2019

## 8. Plant and equipment (continued):

Included in plant and equipment is \$1,818,895 (2018 - \$1,494,780) of assets under construction being \$1,264,862 (2018 - \$788,741) general equipment and \$554,033 (2018 - \$706,039) distribution piping. For the year ended December 31, 2019, capitalized borrowing costs related to the construction of the distribution system amounted to nil (2018 - nil).

## 9. Deferred developer contributions:

The Company defers contribution amounts received from developers related to the cost of initial connection, including installation of the energy transfer station. The developer contributions are recognized over the useful life of the associated general equipment from the date the respective building is deemed available to use.

The following table summarizes the amounts recognized as at year end:

	2019	2018
Deferred developer contributions, beginning of year	\$ 5,374,637	\$ 3,628,438
Developer contributions received	928,351	1,852,960
Recognized revenue from developer contributions	(119,764)	(106,761)
	6,183,224	5,374,637
Less: current portion of deferred developer contributions	322,307	106,761
Non-current deferred developer contributions	\$ 5,860,917	\$ 5,267,876

## 10. Oval Village District Energy Utility ("OVDEU") Concession Agreement:

On October 30, 2014, the Corporation and the OVDEU developer ("the Concessionaire") entered into a 30 year Concession Agreement, which is a public-private partnership project ("P3"), where the Concessionaire will design, construct, finance, operate and maintain the infrastructure for the district energy utility at the Oval Village community. The total estimated concession liability to finance the construction of the OVDEU at full build out is \$38,686,000 (2018 - \$38,344,000) and will be accrued over time as the services are rendered.

The Concession Agreement is payable monthly in accordance with the Concession Agreement terms. Required concession liability payment obligations are disclosed in note 12.

# LULU ISLAND ENERGY COMPANY LTD.

Notes to Financial Statements (continued)

Year ended December 31, 2019

## 10. Oval Village District Energy Utility ("OVDEU") Concession Agreement (continued):

OVDEU Concession Agreement liability:

	2019	2018
Concession Agreement liability - capital	\$ 7,049,839	\$ 6,605,178
Concession Agreement liability - non-capital	1,116,387	1,024,926
	8,166,226	7,630,104
Less: current capital portion of concession liability	1,265,563	609,742
Less: current non-capital portion of concession liability	1,056,219	791,586
	2,321,782	1,401,328
Non-current portion of concession liability	\$ 5,844,444	\$ 6,228,776

The average finance cost on the concession liability is 5.08% for the year ended December 31, 2019 (2018 - 5.08%).

The concession liability is repayable as follows:

2020	\$ 2,321,782
2021	1,422,112
2022	1,984,998
2023	2,064,398
2024 and thereafter	372,936
Total	\$ 8,166,226

The following tables summarizes the changes in the concession liability due to financing cash flows and liability related charges:

Balance January 1, 2019	\$ 7,630,104
Additions	698,123
Finance expense (note 5)	435,608
Net repayment	(597,609)
Balance December 31, 2019	\$ 8,166,226



# LULU ISLAND ENERGY COMPANY LTD.

Notes to Financial Statements (continued)

Year ended December 31, 2019

## 11. Limited Guarantee Agreement:

On October 30, 2014, the Concessionaire and the City entered into a Limited Guarantee Agreement. The City is the Guarantor and guarantees the performance of some of the Company's obligations under the Concession Agreement to a maximum of \$18.2 million (2018 - \$18.2 million).

## 12. Commitments and contingencies:

### *Public-private partnership commitments:*

Payments to the Concessionaire under the Concession Agreement are based on the Concessionaire's Annual Revenue Requirement, which is based on the utility cost of service rate-setting principles in British Columbia utilizing forward test years. The Annual Revenue Requirement is a combination of Capital and Operating charges. The Capital charge is comprised of capital expenditures and depreciation, and Operating charge is comprised of services costs, financing costs, income and other taxes and return on equity.

The information presented below shows the expected committed cash outflow for the next year under the Concession Agreement for the capital and operating costs of the assets. As construction progresses the asset values are recorded as plant and equipment and the corresponding liabilities are recorded as concession agreement liabilities as disclosed in note 10.

	Capital commitment	Operating commitment	Total commitment
2019	\$ 1,265,563	\$ 1,056,219	\$ 2,321,782

## 13. Related party transactions:

Included in these financial statements are transactions with various Crown corporations, ministries, agencies, boards and commissions related to the Company by virtue of common control by the City, the Province of British Columbia or the Government of Canada. The Company has applied the modified disclosure requirements under IAS 24, *Related Party Disclosures*, which is only applicable for government-related entities.

### (a) Due from City of Richmond:

During 2019, the Company received and recognized in revenues \$962,241 (2018 - \$934,215) for its services of advancing district energy opportunities in the City. Staff and advanced design activities on low carbon district energy initiatives are covered by this fee. With or without the Company, the City would need to fund these costs in order to successfully implement district energy initiatives for the City and position itself at the forefront of tackling

# LULU ISLAND ENERGY COMPANY LTD.

Notes to Financial Statements (continued)

Year ended December 31, 2019

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## 13. Related party transactions (continued):

### (a) Due from City of Richmond (continued):

During 2019, the Company received and recognized energy model review fees into other income of \$156,740 (2018 - \$151,083) relating to district energy permit fees collected by the City for in-building district energy related equipment reviews performed by the Company.

During 2019, \$158,761 (2018 - \$157,085) of salary and benefit expenses were charged to the City for the costs incurred due to Company staff being assigned to perform project management duties for the City projects. These costs have been charged to the City on a cost recovery basis and are included as a reduction to general and administrative expenses.

The total amount due from the City as a result of the above transactions as at December 31, 2019 is \$136,168 (2018 - \$1,375,799) and is included within accounts receivable.

These transactions are in the normal course of operations and are measured at the exchange amount, which is the amount of consideration established and agreed to by the related parties. The amount is non-interest bearing and repayable on demand.

### (b) Key management personnel

The Company did not enter into any transactions with key management personnel in the year ended December 31, 2019 (2018 - none).

No key management personnel are remunerated by the Company. A fee of \$61,417 (2018 - \$59,758), included in general and administration expenses, was paid to the City for the day-to-day support that the Company received from the City staff over the year. These costs have been charged to the Company on a cost recovery basis and include an element of re-charge for City key management personnel.

## 14. Share capital:

At December 31, 2019, the authorized share capital comprised 10,000 (2018 - 10,000) common shares without par value.

As at December 31, 2019, the Company has issued 450 common shares (2018 - 450) at \$0.01 per share totaling \$4.50 (2018 - \$4.50) and contributed surplus of \$27,397,110 (2018 - \$27,397,110).

# LULU ISLAND ENERGY COMPANY LTD.

Notes to Financial Statements (continued)

Year ended December 31, 2019

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## 15. Fair values:

The Company uses the following hierarchy to determine and disclose fair value of financial instruments:

- Level 1 - quoted prices (unadjusted) in active markets for identical assets or liabilities; and
- Level 2 - inputs other than quoted prices that are observable for asset or liability, either directly or indirectly; and
- Level 3 - inputs for the asset or liability that are not based on observable market data (unobservable inputs).

If the inputs used to measure the fair value of an asset or a liability might be categorized in different levels of fair value hierarchy, then the fair value measurement is categorized in its entirety in the same level of the fair value hierarchy as the lowest level input that is significant to the entire measurement.

### (a) Financial assets and liabilities not measured at fair value:

The carrying amounts for cash and cash equivalents, accounts receivable, investments and accounts payable and accrued liabilities approximate their fair values due to their short-term nature.

### (b) Non-current financial liabilities:

Subsequent to initial recognition the concession liability is accounted for at amortized cost using the effective interest method. The carrying amount of the concession liability approximates its fair value due to the nature of liabilities accrued and benchmark market rate of interest rate applied (level 3 inputs).

## 16. Financial risk management and financial instruments:

### (a) Overview

The Company has exposure to the following risks from its use of financial instruments:

- Credit risk
- Liquidity risk
- Market risk (interest rate risk).

### (b) Risk management framework:

The Board of Directors has overall responsibility for the establishment and oversight of the Company's risk management framework. The management reports regularly to the Board of Directors on its activities.

# LULU ISLAND ENERGY COMPANY LTD.

Notes to Financial Statements (continued)

Year ended December 31, 2019

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## 16. Financial risk management and financial instruments (continued):

### (b) Risk management framework (continued):

The Company's risk management policies are established to identify and analyze the risks faced by the Company, to set appropriate risk limits and controls, and to monitor risks and adherence to limits. The Company, through its training and management standards and procedures, aims to develop a disciplined and constructive control environment in which all employees understand their roles and obligations.

### (c) Credit risk:

Credit risk is the risk of financial loss to the Company if a customer or counterparty to a financial instrument fails to meet its contractual obligations. Such risks arise principally from certain financial assets held by the Company consisting of its cash and cash equivalents, trade accounts receivables and other investments. The Company assesses these financial assets on a continuous basis for any amounts that are not collectible or realizable. It is management's opinion that the Company is not exposed to significant credit risk from its financial instruments.

#### (i) Trade and unbilled trade receivables:

The Company trades mainly with recognized and creditworthy third parties. It is the Company's policy that all customers who wish to trade on credit terms are subject to credit verification procedures. In addition, receivable balances are monitored on an ongoing basis with the result that the Company's exposure to bad debts is not significant.

The Company establishes an allowance for doubtful accounts that represents its estimate of incurred losses in respect of trade and other receivables based upon factors surrounding the credit risk of specific accounts, historical trends and other information.

At December 31, 2019 and 2018 all trade and other receivables were neither past due (current) nor impaired and related to end-user customers in the City's geographic region.

#### (ii) Investments:

Credit risk arising from other financial assets of the Company comprises cash and cash equivalents and investments. The Company's exposure to credit risk arises from default of the counterparties. The Company manages credit risk through investing only in cash term deposits with established financial institutions which are considered to be low risk.

### (d) Liquidity risk:

Liquidity risk is the risk that the Company will encounter difficulty in meeting the obligations associated with its financial liabilities that are settled by delivering cash or another financial asset. The Company's approach to managing liquidity is continually monitoring actual and forecasted cash flows from operations and anticipated investing and financing activities to ensure, as far as possible, that it will always have sufficient liquidity to meet its liabilities when due, under both normal and stressed conditions, without incurring unacceptable losses or risking damage to the Company's reputation.



# LULU ISLAND ENERGY COMPANY LTD.

Notes to Financial Statements (continued)

Year ended December 31, 2019

## 16. Financial risk management and financial instruments (continued):

### (d) Liquidity risk (continued):

The Company's terms of business require amounts to be paid from customers within 30-days of the date of invoice. The accounts payable and accrued liabilities and due from the City are in the normal course of operations and paid within the following fiscal year. The commitments under the concession liability are disclosed in note 12.

The information presented below shows the undiscounted contractual maturities of the concession liability, including estimated interest payments.

	Carrying amount	Contractual cash flow	Less than 1 year	1 - 2 years	2 - 5 years
December 31, 2019	\$ 8,166,226	\$ 9,163,315	\$ 2,385,002	\$ 1,541,473	\$ 5,236,840
December 31, 2018	7,630,104	8,793,982	1,439,485	1,579,702	5,774,795

### (e) Market risk:

Market risk is the risk that changes in market prices, such as interest rates and other rate risks, will affect the Company's income or the value of its holdings of financial instruments.

The objective of market risk management is to manage and control market risk exposures within acceptable parameters, while optimizing the return.

Interest rate risk is the risk that the fair value of future cash flow of a financial instrument will fluctuate because of changes in the market interest rate.

It is management's opinion that the Company is not exposed to significant market (interest rate) risk from its financial instruments.

## 17. Capital management:

The Company's objective when managing capital is to maintain a strong capital base to sustain future development of the business, so that it can provide return for the shareholder and benefits for other stakeholders.

The Company considers the items included in shareholder's equity and the concession liability as capital. The Company manages the capital structure and makes adjustments to it in the light of changes in economic conditions and the risk characteristics of the underlying assets. In order to maintain or adjust the capital structure, the Company may request additional investment from its shareholder. The Company is not required to meet any debt covenants. The Company is not subject to externally imposed capital requirements.

There were no changes in the Company's approach to capital management during the year (2019: no changes).

# LULU ISLAND ENERGY COMPANY LTD.

Notes to Financial Statements (continued)

Year ended December 31, 2019

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## 18. Pension plan:

The Company and its employees contribute to the Municipal Pension Plan (a jointly trustee pension plan). The board of trustees, representing plan members and employers, is responsible for administering the plan, including investment of assets and administration of benefits. The plan is a multi-employer defined benefit pension plan. Basic pension benefits are based on a formula. As at December 31, 2018, the plan has about 205,000 active members and approximately 101,000 retired members. Active members include approximately 40,000 contributors from local governments.

Every three years, an actuarial valuation is performed to assess the financial position of the plan and adequacy of plan funding. The actuary determines an appropriate combined employer and member contribution rate to fund the plan. The actuary's calculated contribution rate is based on the entry-age normal cost method, which produces the long-term rate of member and employer contributions sufficient to provide benefits for average future entrants to the plan. This rate may be adjusted for the amortization of any actuarial funding surplus and will be adjusted for the amortization of any unfunded actuarial liability.

The most recent valuation for the Municipal Pension Plan as at December 31, 2018, indicated a \$2,866 million funding surplus for basic pension benefits on a going concern basis. The next valuation will be at December 31, 2021, with results available in 2022.

The Company paid \$76,337 (2018 - \$63,598) for employer contributions to the Plan in 2019.

Employers participating in the plan record their pension expense as the amount of employer contributions made during the fiscal year (defined contribution pension plan accounting). This is because the plan records accrued liabilities and accrued assets for the plan in aggregate, resulting in no consistent and reliable basis for allocating the obligation, assets and cost to individual employers participating in the plan.

## 19. Subsequent event:

Subsequent to December 31, 2019, the COVID-19 outbreak was declared a pandemic by the World Health Organization. The services that the company provides has been classified as essential services in British Columbia during COVID-19 pandemic. The pandemic presents uncertainty over the Company's future cash flows and may have an impact on the Company's future operations. Potential impacts on the Company's business could include stagnation and collection of revenue, decrease in profitability and delays in completing capital project work. As the situation is dynamic and the ultimate duration and magnitude of the impact on the economy are not known, an estimate of the financial effect on the Company is not practicable at this time.

## Lulu Island Energy Company

6911 No. 3 Road, Richmond, BC V6Y 2C1

Telephone: 604-276-4000

[www.luluislandenergy.ca](http://www.luluislandenergy.ca)