DEC 2020

BLATCHFORD RENEWABLE ENERGY

2021 Rate Filing

Attachment 2 - FCS00126

Blatchford Renewable Energy

Edmonton

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1.0 Overview

This 2021 Blatchford Renewable Energy Rate Filing is the annual filing for approval of end use customer rates and fees for Blatchford Renewable Energy ("BRE" or "Blatchford"). As per Section 3.0 the Blatchford District Energy Utility Fiscal Policy C597 ("Fiscal Policy");

> "The Utility Committee shall recommend annually to City Council the customer rates for the upcoming year, based on review of an annual rate filing prepared by the Utility subsequent to the preparation and presentation of the 4-year Business Plan."

This Rate Filing is requesting City Council approval of the following:

- Customer rates and infrastructure fees for 2021, to be set based on the approved 2020 customer rates and fees escalated by 2.7 percent, as provided in Appendix 5.0.

In preparing this Rate Filing, BRE has followed the principles as set out in the Fiscal Policy. In particular, BRE established the forecast 2021 revenue requirement based on a traditional cost of service approach while taking into account a Policy Statement in the Fiscal Policy that end-use customers would pay "at most a comparable fee to what they would elsewhere in the City of Edmonton through their energy utility bills and annual maintenance costs" in establishing the proposed 2021 end use customer rates. This Policy Statement has guided the approach taken to design end use customer rates in Blatchford and will henceforth be referred to as Business as Usual ("BAU").

In December 2018, City Council approved the Blatchford Utility 2019 Annual Rate Filing which established the regulatory framework and customer rates for the initial year of operation of the Blatchford utility. For 2019, a "pegged approach" was used to set customer rates under which Blatchford utility customer bills were pegged to what typical utility bills would be elsewhere in the City of Edmonton in 2019 for heating, cooling, and hot water (i.e. BAU).

In December 2019, City Council approved the Blatchford Utility 2020 Annual Rate Filing, whereby a "levelized approach" was then used to update customer rates for 2020 based on escalating 2019 approved rates by 2.7 percent, consistent with the rate setting methodology reflected in the business case presented to City Council on March 16, 2016, for the development of the District Energy Sharing System at Blatchford. Under the levelized approach, customer rates in the business case were increased by 2.7 percent on average each year over the initial 50 years to ensure stable and consistent rate increases, with rates set to under-recover costs in the early years of the Utility's operation when the customer base is small and to gradually

recover past costs in the later years when the customer base is fully established. The levelized approach resulted in customer rates for 2020 that were:

- comparable to the 2020 rates calculated in the updated business case;
- consistent with the Fiscal Policy that requires stable consistent rate increases;
- relatively simple to understand and implement; and
- lower than rates based on the pegged approach, and therefore in accordance with the Fiscal Policy that customers pay at most a comparable fee to what they would elsewhere in the City of Edmonton.

In establishing 2021 customer rates, BRE is proposing to continue to use the levelized approach and escalate the approved 2020 rates by 2.7 percent consistent with the approach utilized in the 2020 Rate filing and the District Energy Sharing System business case. A further discussion of the methodology utilized to establish the proposed 2021 end use customer rates is included in Section 6.

The first customer connections to the BRE system occurred in July of 2020. A total of 17 customers are forecast to be connected to the system by the end of 2020 with a further 58 customers connecting in 2021. Given that customer rates are to be set utilizing the levelized approach, the 2021 forecast customer revenue will not be sufficient to fully recover BRE's 2021 forecast revenue requirement. It is anticipated that this will also be the case for 2022. As a result, BRE has implemented a deferral account whereby the annual revenue shortfall amounts will be accumulated in the deferral account to be recovered in future years when customer revenues exceed BRE's revenue requirement. Consistent with Section 2.1C of the Fiscal Policy BRE will borrow (on a short term basis) from the City of Edmonton in order to meet the insufficient cash flow during its first years of operation. Further details are provided in Section 6.

BRE has provided a set of schedules with details of its 2021 revenue requirement and revenue on proposed rates in Appendix 4. These schedules utilize very similar format and content to the Minimum Filing Requirements format utilized in the electric and gas utility industry in Alberta.

The Rate Filing is organized as follows:

Section 2.0 - Background on the Blatchford Development
Section 3.0 - Blatchford Fiscal Policy
Section 4.0 - Blatchford 2021-2024 Business Plan
Section 5.0 - 2021 Forecast Revenue Requirement
Section 6.0 - Cost of Service, Rate Design, Revenue on Proposed Rates & Bylaw 17943
Section 7.0 - Appendices 1.0 - 5.0

2.0 Background

The Blatchford development is aimed to be one of the world's largest sustainable communities and home to 30,000 residents. Blatchford will be comprised of two primarily residential spaces on the east and west side of the site, along with a town centre, an 80-acre central park and a civic plaza.

Blatchford Renewable Energy is a new public, city owned utility that has been established, to own and operate a District Energy Sharing System ("DESS") and certain mechanical equipment within the customer buildings themselves. All buildings in Blatchford, with the exception of net-zero carbon buildings, must be connected to the DESS for all heating, cooling and domestic hot water services.

The first stage of the District Energy Sharing System is operational (Energy Centre One), so BRE's focus has shifted to include day-to-day operations while still planning future stages, including a sewer heat recovery system. The sewer heat recovery system will incorporate another renewable energy source into the District Energy Sharing System by transferring the thermal energy from the two combined sewer lines that run under Blatchford's east side. The initial planning and design for this system has started. This Energy Center will be located in the Blatchford Market area and is currently expected to be commissioned in 2023. BRE is working with EPCOR and other stakeholders on the development of the project, which would tie renewable sewer heat energy that is in the existing sewers under Blatchford into the District Energy Sharing System. This next Energy Centre would primarily service the Blatchford town centre market area.

Guided by the sales activities of the Blatchford land development team, BRE is expecting to connect to 17 fee-simple townhouse accounts by the end of 2020. The number of expected accounts will increase to 75 in 2021 and to 113, 162 and 212 in the years 2022 to 2024 respectively. In 2024, Blatchford Renewable Energy is anticipated to provide thermal energy services to a connected floor space area of 123,500 square meters, with all energy coming from the first Energy Center. This represents a slower pace of account development than initially anticipated, which was adjusted as is standard in the land development industry to align with current sales, market conditions and builder plans. Future development scenarios will also need to include the medium to long term impact of COVID-19 on the real estate market in Edmonton.

3.0 Fiscal Policy

On April 10, 2018, City Council approved the Blatchford District Energy Utility Fiscal Policy C597. The Fiscal Policy is the prerequisite required to support the first four year Utility Business Plan and Bylaw including rates. As stated in the Fiscal Policy, the purpose of the Policy is to:

1. Ensure that the Blatchford District Energy Utility is operated in a manner that reflects City Council's overall vision and philosophical objectives for BRE.
2. Ensure that there is a consistent approach year over year for the financial planning, budgeting, and rate setting for the City managed utility.
3. Ensure that BRE is financially sustainable over the long term.

In addition to the three statements noted above, the following four Policy Statements outlined in the Fiscal Policy helped establish the regulatory framework and methodology utilized in this Rate Filing:

1. The utility is to be operated in a manner that balances the best possible service at the lowest cost (public utility) while employing private sector approaches to rate setting.
2. Similar to private utilities, the utility will account for the cost of service under a full cost accounting approach. All customer charges will be based upon cost of service with the end user (customer) paying at most a comparable fee to what they would elsewhere in the City of Edmonton through their energy utility bills and annual maintenance costs.
3. Through a phased approach, the utility will generate positive net income, cash flow and a rate of return sufficient to cover current year expenses, working capital requirements, and to facilitate the funding for capital infrastructure and rehabilitation and replacement of capital assets.
4. The utility is to contribute towards achieving the City's Community Energy Transition Strategy.

During the review of the 2020 Annual Rate Filing on November 1, 2019, the Utility Committee requested that Administration review the Fiscal Policy to provide more flexibility in setting customer rates going forward. In particular, the Utility Committee raised concerns that the Fiscal Policy as currently written could limit the ability for setting future customer rates if rates under the pegged approach in a given year were less than the levelized approach rates of 2.7 percent per year. At the October 2, 2020 Utility Committee meeting, Administration recommended that specific rate setting principles be added to the fiscal policy which: (1) incorporate industry best practice utility rate setting principles; (2) further explain that customer rates may be set to recover the forecast cost of providing service over a longer term basis under the levelized approach; and (3) clarify that multiple years be used for comparison of Blatchford utility customer rates going forward to ensure they remain competitive. These rate setting principles were subsequently approved by Council on October 17, 2020 and a separate report is being brought forward at the December Utility Committee meeting that will provide the full updated content of the Blatchford Fiscal Policy for final approval by Utility Committee and City Council.

In respect of this 2021 Rate Filing and the end-use customer rates included herein, the second Policy Statement, along with the proposed amendments to the Fiscal Policy discussed above, were instructive in establishing the framework for the setting of the

end-use customer rates, both the rate levels and the rate structure. This will be discussed further in the Rate Design section of this Filing.

A copy of the Fiscal Policy including the proposed rate setting principles has been provided in Appendix 2.0.

4.0 2021-2024 Business Plan

The 2021-2024 Business Plan was presented to the Utility Committee on October 2, 2020 (Integrated Infrastructure Services report CR_8340). A copy of the Business Plan is included in Appendix 3.0.

BRE will fund its operating and capital requirements from a number of sources. The following sources of funding will be required and utilized during the initial years of operation:

- Rate Revenue
  BRE will generate revenue through monthly customer rates. Rates will be designed to be at most comparable to what customers would pay elsewhere in the City through their energy utility bills and annual maintenance costs.

- Infrastructure Fee
  BRE will collect a one time infrastructure fee for units and buildings from the builders that connect to the DESS. For residential units, an infrastructure fee of $1,750 is currently approved for 2020. For each commercial development, the infrastructure fee is $20 per square meter ($m^2$) of floor space. This fee creates an additional source of revenue for BRE that would otherwise need to be funded by Utility rates or the non-refundable cash infusion.

- Non-refundable cash-infusions
  Non-refundable cash infusions are required for the initial years of operation to offset the capital investment required to establish BRE and allow it to grow over time to achieve financial sustainability. The total amount required is anticipated to be $93 million.

- Builder Contributed Capital
  The Builder will pay for central mechanical room equipment in multi-unit buildings, which will then be owned, operated and maintained by BRE. These will be contributed assets on BRE's balance sheet and will not attract a net depreciation expense or a return on rate base.

- Debt Borrowing
  The initial capital expenditures for BRE may be financed with long term debt but will ultimately need to be funded (and the debt servicing costs repaid) by non-refundable cash-infusions to ensure the long-term financial sustainability of the utility.

The 2021-2024 BRE Business Plan provides an updated overview from the strategic and operational level for the utility. Several key milestones have been achieved including connecting the first customers, starting utility operation, building a utility brand, logo and website, and advancing the planning and design of the next utility stages. The strategic objectives of the utility remain the growth of the District Energy Sharing System and the integration of emerging technologies into the utility's operation to reach steady reliable operation, financial sustainability, and achieve Council's vision for a carbon neutral community powered entirely by renewable energy. The growth of the new utility is, and will continue to be, closely connected to the land development activities in Blatchford.

5.0 2021 Forecast Revenue Requirement

5.1 Methodology and Key Assumptions

The 2021 BRE Rate Filing utilizes the methodology first established in the 2019 BRE Rate Filing and adheres to the principles set out in the Blatchford Fiscal Policy, which establishes the framework for how BRE will set rates, finance its capital and manage its cash position. As per the Fiscal Policy, an annual rate filing will be submitted each year requesting City Council approval of end use customer rates for the following year.

The schedules provided in the 2021 Rate Filing include revenue and expenditure amounts for the following years as approved in the 2019 Operating Budget and updated in the 2020 and 2021 Annual Rate Filings: 2019 actuals, 2019 approved budget; 2020 current forecast (with actuals to the end of September), 2020 approved rate filing, 2021 proposed rate filing, and the most recent forecast for 2022. The updated revenues and expenditures included in the 2021 proposed annual rate filing have been incorporated into the 2021 supplementary operating budget adjustment for Utility Committee and City Council approval in December 2020.

This Rate Filing takes into account the most recent land development and sales forecast developed by the Blatchford Redevelopment Office. The first Blatchford customers connected to the system in July 2020. It is expected that fee-simple townhouses will be the only residence type to be connected to the system through to the end of 2021. The airport control tower is forecast to connect to the system in 2021 as well. Other types of residences, such as multi story apartment/condominium buildings, will be connected

starting in 2022. The following table summarizes the forecast connections and energy consumption during the 2021-2022 forecast period.

Table 1: Forecast Customer Connections and Energy Consumption by End Use

Item	2019 Actual	2020 Rate Filing	2020 Current Forecast	2021 Proposed Rate Filing	2022 Current Forecast
New Customer Connections					
Townhouses - Fee Simple	0	52	17	57	31
Townhouses - Strata	0	-	-	-	6
Apartments - 4-6 Story	0	-	-	-	1
Apartments - 7-10 Story	0	-	-	-	-
Commercial/Office	0	-	-	-	-
Other - Control Tower	0	1	-	1	-
Total New Customer Connections	-	**53**	**17**	**58**	**38**
Energy Consumption (MWh)					
Townhouses - Fee Simple	0	273.3	30.6	311.7	648.3
Townhouses - Strata	0	-	-	-	18.8
Apartments - 4-6 Story	0	-	-	-	71.0
Apartments - 7-10 Story	0	-	-	-	-
Commercial/Office	0	-	-	-	-
Other - Control Tower	0	3.3	-	1.7	6.7
Total Energy Consumption	-	**276.6**	**30.6**	**313.3**	**744.8**

Other than the airport control tower, the current customer build-out forecast includes only residential customers during the forecast period. Other than the possibility of small retail establishments in the base of the multi-family units being added during the forecast period, it is anticipated that there will be no larger commercial, office or institutional customer connections until the extension of the Metro Line from NAIT to Blatchford is completed, currently expected to be in 2024/2025.

As stated in previous BRE business plans and rate applications, non-refundable cash infusions are required for the initial years of operation to offset the capital investment required to establish BRE and allow it to grow over time to achieve financial sustainability. The total non-refundable cash infusions required to achieve financial stability are currently expected to be $93 million. For purposes of calculating the revenue requirement and deferral account under Cost of Service in the 2021 Rate Filing, the non-refundable cash contribution for the initial capital investments has been assumed at this time, resulting in no long term interest expense or amortization being incorporated. The 2021 revenue requirement and deferral account under Cost of Service will be amended in future annual rate filings as the availability of the non-refundable cash infusion is further clarified.

In addition, builder contributed capital will be utilized to fund certain assets, specifically equipment in the mechanical rooms of multi-unit buildings. Accordingly, for purposes of this Rate Filing all capital expenditures required during the 2020-2022 forecast period are assumed to be funded through the non-refundable cash infusion or builder contributed capital resulting in BRE having no debt or rate base on its balance sheet during the forecast period.

5.2 Determination of Forecast Revenue Requirement

The total 2021 forecast revenue requirement and revenue for BREU is $1.205 million and $0.138 million respectively, resulting in a revenue shortfall of $1.067 million. The following table provides a summary of the annual revenue requirement and customer revenue during the 2020-2022 forecast period.

Table 2: Forecast Revenue Requirement, Customer Revenue and Revenue Surplus/(Shortfall) ($000s)

Item	2019 Actual	2019 Approved Budget	2020 Rate Filing	2020 Current Forecast	2021 Proposed Rate Filing	2022 Current Forecast
Revenue Requirement						
Operating Costs	853.2	1,342.4	1,255.7	996.0	1,205.3	1,331.1
Depreciation	-	-	-	-	-	-
Return on Rate Base	-	-	-	-	-	-
Revenue Offsets	-	-	-	-	-	-
Total Revenue Requirement	**853.2**	**1,342.4**	**1,255.7**	**996.0**	**1,205.3**	**1,331.1**
Revenue						
Revenue on Proposed Rates	-	77.2	24.1	3.3	34.2	82.8
Infrastructure Fee	7.0	458.5	75.3	29.8	104.2	206.7
Total Revenue	**7.0**	**535.7**	**99.3**	**33.0**	**138.4**	**289.5**
Revenue Surplus (shortfall)	(846.2)	(806.7)	(1,156.4)	(963.0)	(1,066.9)	(1,041.5)

The revenue requirement for BRE does not include any depreciation or return on rate base as it is expected that all capital additions during the forecast period will be funded by a combination of the non-refundable cash infusion and builder contributions, as noted above. Accordingly, BRE will have no assets on its balance sheet during the 2020-2022 forecast period and no equity, debt, interest expenses, return on equity or depreciation expense.

OPERATING COSTS

Initial operation of the first stage of the DESS, with a relatively small number of connections and accounts, will be managed internally by BRE in partnership with other City departments, external contractors and technical experts. Operation and maintenance is being provided by the City's Facilities Maintenance Services (FMS) section within the City Operations department. BRE has been working with FMS to develop operating protocols and maintenance procedures. Operations and maintenance started after commissioning, and engineering and operational support will primarily be provided internally with some support from external technical consultants and contractors. Service providers have been engaged for all aspects of utility operation. BRE will determine an opportune time to engage an external partner as per City Council's direction, which will likely occur when the initial stage of operations have matured and during the next planning stages for future infrastructure.

The following table summarizes the forecast Operating Costs by major expense category.

Table 3: Forecast Operating Costs by Major Expense Category ($000s)

Item	2019 Actual	2019 Approved Budget	2020 Rate Filing	2020 Current Forecast	2021 Proposed Rate Filing	2022 Current Forecast
Operating Costs						
Utilities	15.7	24.2	38.0	83.8	74.9	80.4
Operations & Maintenance	581.7	700.1	820.9	700.7	797.0	939.2
Administration	223.9	369.9	312.3	162.0	225.1	228.4
Customer Billing Services	24.7	175.9	22.1	3.1	31.5	7.9
Corporate Administration/Shared Services	7.1	72.4	62.4	46.5	76.7	75.2
Total Operating Costs	**853.2**	**1,342.4**	**1,255.7**	**996.0**	**1,205.3**	**1,331.1**

The following sections provide further detail in respect of each of the major operating cost categories shown in Table 3 above.

UTILITIES

BRE requires electricity and natural gas utility services in order to operate the first stage of the DESS. The following table summarizes the cost of utilities over the 2020 to 2022 forecast period.

Table 4: Forecast Utilities Cost ($000s)

Item	2019 Actual	2019 Approved Budget	2020 Rate Filing	2020 Current Forecast	2021 Proposed Rate Filing	2022 Current Forecast
Utility Costs						
Electricity	15.6	21.9	31.5	74.3	55.0	60.0
Natural Gas (incl. Carbon tax)	0.1	2.3	4.1	1.0	5.5	6.0
Telephones	-	-	2.3	1.3	2.4	2.4
Water/Drainage/Sewer	-	-	-	7.3	12.0	12.0
Total Utilities	**15.7**	**24.2**	**38.0**	**83.8**	**74.9**	**80.4**

OPERATION & MAINTENANCE COSTS

The forecast Operation & Maintenance costs for each year are comprised of the following cost categories: (1) Operation & Maintenance for all BRE owned assets, (2) Personnel, (3) Training & Development and (4) Technical Consultants.

The infrastructure built and installed to serve customers at Blatchford requires ongoing maintenance as well as a workforce to manage BRE's day to day operations. The forecast operation and maintenance costs for 2021-2022 are based on a capital maintenance factor (i.e. a percentage of capital) for each class of assets (e.g. ground heat exchange equipment, energy center equipment, distribution piping, etc.) applied to the total capital in service each year for each class of assets and real time experience by FMS based on initial operations. The capital maintenance factors were based on industry standards for similar type of equipment. It also took into account initial warranty considerations for the equipment. Operations and maintenance will initially be provided by the City's Facilities Maintenance Services Branch.

BRE will have up to six direct employees responsible for the managing of day to day operations during the forecast period. The following table provides details of the six direct employees including position title and the portion of each employee's time that will be allocated to BRE (a percentage of some employee's time will be allocated to other renewable energy projects currently being undertaken by the City of Edmonton).

Marketing and communication support is provided through the Communications & Engagement Department. A full-time utility marketing and communication resource is anticipated to be added to the existing Blatchford marketing team in 2021 so essential communication and customer services can continue to be in place as the utility grows.

Table 5: BRE Personnel

	Full Time Equivalent		
Employee Title	2020 Current Forecast	2021 Proposed Rate Filing	2022 Current Forecast
Director - Renewable Energy Systems	0.4	0.4	0.4
Program Manager - Renewable Energy Systems	0.7	0.7	0.7
Project Coordinator - Renewable Energy Systems	0.7	0.7	0.7
Communication and Marketing Position	-	1.0	1.0
Coop Engineering Student	1.0	1.0	1.0
Administrative Assistant	0.3	0.3	0.3

The total forecast cost of BRE personnel was determined by applying the full time equivalent factor in the table above to each employee's current total compensation (base salary plus benefits). An annual escalation factor of 2 percent was applied to determine the forecast Personnel cost for 2021-2022. The cost of all but the communication and marketing position is included in the Personnel cost category in the Operation and Maintenance cost grouping. The cost of the communication and marketing position has been included in the Marketing, Education and Communication cost category described in the Administration Costs section below.

In addition to the operation and maintenance costs and the direct BREU employees, consultants will be retained to assist with technical and operational aspects of running BRE. A cost of $239,290 has been forecast for technical consultants in 2021 escalated by 2 percent for 2022.

Forecast costs for training and development were also included in the Operation and Maintenance Cost Forecast. For 2021 an estimate of $6,968 was included, escalated by 2 percent for 2022.

Costs related to the leasing/rental of equipment has been included in the BRE budget. The 2021 forecast cost includes a total of $5,982 for the lease/rental of computers, escalated by 2 percent for 2022.

The following table summarizes the total Operation and Maintenance Costs over the 2020-2022 forecast period.

Table 6: Forecast Operation & Maintenance Cost ($000s)

Item	2019 Actual	2019 Approved Budget	2020 Rate Filing	2020 Current Forecast	2021 Proposed Rate Filing	2022 Current Forecast
Operations & Maintenance						
Energy Center 1/Main Distribution System	-	155.2	197.8	106.3	178.4	277.1
Customer Connections and Meters	-	13.9	18.5	-	22.1	53.7
Personnel	329.9	275.9	337.5	348.1	344.3	351.2
Training and Development	9.0	5.8	6.8	1.2	7.0	7.1
Equipment Rental	2.5	19.3	25.6	5.0	6.0	6.1
Technical Consultants	240.3	230.0	234.6	240.0	239.3	244.1
Total Operating Costs	**581.7**	**700.1**	**820.9**	**700.7**	**797.0**	**939.2**

ADMINISTRATION COSTS

The forecast Administration costs each year are: (1) Marketing, Education and Communication, and (2) External Professional Services Costs.

The Marketing, Education & Communication costs include an estimate for time and materials required for marketing, communication and education of the Blatchford Community to utility customers during the forecast period. The cost of a new communication and marketing position has been included in this cost category beginning in 2021.

A cost of $104,867 was forecast for 2021 and $105,764 for 2022 for external professional services to assist with non-technical (e.g. financial) aspects of setting up BRE.

Forecast Administration costs were escalated by 2 percent for 2022.

The following table summarizes the forecast Administration costs over the forecast period.

Table 7: Administration Cost ($000s)

Item	2019 Actual	2019 Approved Budget	2020 Rate Filing	2020 Current Forecast	2021 Proposed Rate Filing	2022 Current Forecast
Administration						
Marketing, Education & Communication	69.4	298.0	121.7	42.0	120.3	122.7
External Professional Services	154.6	71.9	190.6	120.0	104.9	105.8
Total Administration	**223.9**	**369.9**	**312.3**	**162.0**	**225.1**	**228.4**

CUSTOMER BILLING SERVICES COSTS

BRE has entered into a service level agreement with EPCOR for billing and customer service support for Blatchford Renewable Energy's customers. EPCOR, along with the City's 311 services, will also be involved in customer service functions as it relates to billing, technical and emergency communication and planning. BRE will incur a Monthly Base Services Fee of $6.50 per account per month for billing and customer service

support in 2020 and 2021 plus an Additional Monthly Fee of $45.93 per account per month. This Additional Monthly Fee is required in 2020 and 2021 as EPCOR is currently in the process of replacing its Customer Information/Billing System and will be required to manually bill BRE customers until BRE has been set up in the new billing system, currently expected to be late in 2021. Once the new billing system is in service, BREU will have to establish a new Service Level Agreement with EPCOR.

Table 8: Customer Billing Services Cost ($000s)

Item	2019 Actual	2019 Approved Budget	2020 Rate Filing	2020 Current Forecast	2021 Proposed Rate Filing	2022 Current Forecast
Customer Billing Services						
Monthly Billing Charges	-	23.5	22.1	3.1	31.5	7.9
One-time Set up Costs	24.7	152.4	-	-	-	-
Total Customer Billing Services	**24.7**	**175.9**	**22.1**	**3.1**	**31.5**	**7.9**

CORPORATE ADMINISTRATION COSTS COSTS

The forecast Corporate Administration costs each year are: (1) Shared Services; (2) Asset Usage Fees, and; (3) Transportation and Insurance costs.

Financial, regulatory and legal support for the utility is provided by the Financial and Corporate Services department and the City's Law Branch which has significant expertise in utility management. Both areas were heavily involved during the development of the bylaw, the fiscal policy, annual rate filings and operating and capital budget development for the utility.

The following table summarizes the forecast Corporate Administration Costs over the forecast period.

Table 9: Corporate Administration Cost ($000s)

Item	2019 Actual	2019 Approved Budget	2020 Rate Filing	2020 Current Forecast	2021 Proposed Rate Filing	2022 Current Forecast
Corporate Administration						
Shared Services	1.3	64.4	49.2	33.3	53.2	51.2
Asset Usage Fees	-	8.1	7.5	7.5	16.7	17.1
Other - Transportation and Insurance	5.8	-	5.6	5.7	6.7	6.8
Total Corporate Administration	**7.1**	**72.4**	**62.4**	**46.5**	**76.7**	**75.2**

FRANCHISE FEES AND PROPERTY TAXES

Currently it is anticipated that BRE, as a municipally owned utility, will not be required to pay a franchise fee or property taxes on its facilities to the City of Edmonton during the forecast period. Accordingly there are no franchise fees or property tax amounts included in the 2021-2022 forecast revenue requirement.

DEPRECIATION/AMORTIZATION

BRE's revenue requirement does not include any amounts for depreciation/amortization during the forecast period. It is anticipated that BRE's capital requirements during the initial forecast period will be completely funded through a combination of the non-refundable cash infusion and builder contributions. As a result, contributed assets will be equal to gross assets on the balance sheet resulting in no rate base for BRE for the forecast period.

RETURN ON RATE BASE/INTEREST EXPENSES

As noted above, BRE's assets will be fully funded via the non-refundable cash infusion as well as builder contributions resulting in no rate base during the forecast period. As a result BRE's revenue requirement will not include any return on rate base or interest expenses during the forecast period.

REVENUE OFFSETS

Revenue offsets are miscellaneous revenues earned by a utility and can include items such as late payment penalties, revenue from rental of company owned property and miscellaneous fees and non-rate revenues. No revenue offsets are forecast during the forecast period.

RATE BASE

As noted previously, all required capital for the BRE system during the forecast period is projected to be financed by a combination of the non-refundable cash infusion and builder contributions resulting in no rate base on BRE's balance sheet. The following table provides a summary of the mid year net property, contributions and rate base.

Table 10: Mid-Year Net Property, Contributions and Rate Base ($000s)

	2019	2020	2021	2022
Item	Actual	Current Forecast	Proposed Rate Filing	Current Forecast
Rate Base				
Mid-year Net Property	-	9,669.7	19,365.7	19,392.1
Mid-year Net Contributions	-	(9,669.7)	(19,365.7)	(19,392.1)
Net Mid-year Rate Base	-	-	-	-

CAPITAL ADDITIONS AND CAPITAL EXPENDITURES

The capital additions for 2019 and 2020 are related entirely to the development and construction costs associated with the building of the geoexchange borefield, Energy Center One and the distribution piping system for Phase One of the Blatchford development. Capital expenditures will be incurred during the forecast period related to the planning, design and initial construction of the Sewer Heat Recovery Energy Center ("SHX"). The in-service date for the SHX is expected to be 2023, pending actual development and sales on site and a further review of the strategic master plan for the utility, which is ongoing. The following table provides a summary of the forecast capital additions and capital expenditures during the forecast period.

Table 11: Capital Additions and Capital Expenditures ($000s)

	2019	2020	2021	2022
Item	Actual	Current Forecast	Proposed Rate Filing	Current Forecast
Construction Work in Progress - Previous Year Balance	-	18,744.2	52.8	2,200.0
Current Year Capital Expenditures - Energy Center 1	18,744.2	647.9	-	-
Current Year Capital Expenditures - Sewer Heat Exchange	-	-	2,200.0	2,700.0
Less: Current Year Capital Additions - Energy Center 1	-	(19,339.3)	(52.8)	-
Less: Current Year Capital Additions - Sewer Heat Exchange	-	-	-	-
Construction Work in Progress - Current Year Balance	**18,744.2**	**52.8**	**2,200.0**	**4,900.0**

6.0 Cost of Service, Rate Design and Revenue on Proposed Rates

The traditional regulatory approach in setting end use customer rates in the utility industry typically involves the preparation of a cost of service study which includes the grouping of the utility's customers into unique customer classes. The cost of service study then sets out to allocate the utility's total forecast revenue requirement to each of those customer classes based on well established cost functionalization, classification and allocation methodologies. End use customer rates are then designed to fully recover the forecast revenue requirement allocated to each of those customer classes. The resulting forecast revenue derived from the end use customer rates recovers the utility's total annual forecast revenue requirement.

6.1 Cost of Service Study

As was the case with the 2019 and 2020 Rate Filings, in this 2021 Rate Filing a traditional cost of service study was not completed for several reasons. Firstly, using the levelized approach (as discussed further below) to set end-use customer rates does not align with a traditional cost of service study in that end use rates are not designed to recover the total revenue requirement allocated to each rate class in a given year. Secondly, there is only one type of traditional end use customer (i.e. residential) connecting to the BRE system during the forecast period. While there are two separate fixed charges for the BRE's residential customers (one for townhouses and another for condominiums/apartments) as described in the Rate Design section below, the reason for those separate charges is as a result of utilizing the BAU concept/principle to initially set rates in 2019 and not necessarily due to cost differences in serving these two types of residential customers. Finally, given that the utility is in its very early years of operation there is, at best, very limited data available with respect to essential information required to complete a cost of service study such as consumption data/patterns for the various types of customers and information with respect to the

impact (from both design and operational perspectives) of the various types of customers on the BRE system.

6.2 Rate Design and Proposed End-Use Customer Rates

2019 CUSTOMER RATES - PEGGED APPROACH

The Blatchford Utility 2019 Annual Rate Filing established the regulatory framework and customer rates for the initial year of operation of the Blatchford Utility. The 2019 Rate Filing was guided by the overarching Policy Statement contained in the Blatchford District Energy Utility Fiscal Policy:

> "Similar to private utilities, the Utility will account for the cost of services under a full cost accounting approach. All customer charges will be based upon cost of service with the end user (customer) paying at most a comparable fee to what they would elsewhere in the City of Edmonton through their energy utility bills and annual maintenance costs."

Under a traditional Cost of Service approach, customer rates are established to allow BRE to recover its annual costs to operate ("revenue requirement"). However, given the small number of Blatchford residents and utility customers in the first few years of operation, customer rates established using the traditional Cost of Service approach would result in rates being significantly higher than comparable fees paid elsewhere in the City of Edmonton, and what BRE customers could reasonably be expected to incur. Therefore, an alternative method to set customer rates for the initial years of development and operation of BRE was required.

In order to develop the customer rates for the 2019 Rate Filing, Administration engaged Grant Thornton to assist in establishing the regulatory framework and identifying and quantifying customer rates using alternative methodologies. The customer rates proposed in the Blatchford Utility 2019 Annual Rate Filing, and ultimately approved by City Council, were based on Grant Thornton's recommendation to utilize a **"pegged approach"** to establish customer rates. Under this approach, Blatchford utility bills were pegged to what utility bills would be elsewhere in the City of Edmonton. Grant Thornton determined the typical utility bill (i.e. Business as Usual or BAU) in 2019 for heating, cooling, and hot water that would be paid elsewhere in the City of Edmonton for the types of dwellings that are to be built in the initial stages of the Blatchford development. In accordance with the Fiscal Policy, differences in the annualized maintenance costs to be paid by Business as Usual and BRE customers were also included as adjustments to the typical Business as Usual bills. BRE also used this approach to establish the Business as Usual amounts in the 2020 Rate filing as discussed further below.

2020 CUSTOMER RATES - LEVELIZED APPROACH

Having initially set customer rates for 2019 based on the pegged approach, a **"levelized approach"** was then used to set rates for 2020, consistent with the rate setting methodology in the business case presented to City Council on March 16, 2016 for the development of the District Energy Sharing System at Blatchford. Under the levelized approach, customer rates in the business case are increased by 2.7 percent on average each year over the initial 50 years to ensure stable and consistent rate increases (a key utility rate setting principle). Rates under-recover costs in the early years of the Utility's operation when the customer base is small, but gradually recover past costs in the later years when the customer base is fully established.

In line with the levelized approach, customer rates recommended in the 2020 Annual Rate Filing and approved by City Council in December 2019 (Bylaw 19062 To Amend Bylaw 17943 Blatchford Renewable Energy Utility) increased the 2019 approved customer rates by 2.7 percent. As part of the 2020 Annual Rate Filing, Administration engaged Grant Thornton to also calculate customer rates for 2020 based on the pegged approach to confirm rates under the levelized approach were at most a comparable fee to elsewhere in Edmonton. Under the pegged approach, the 2020 variable rate was $0.0263/kWh, the fixed charge for townhouses was $1.54/day, and the fixed charge for apartments was $1.17/day. Whereas under the levelized approach, the 2020 variable rate was $0.0255/kWh, the fixed charge for townhouses was $1.47/day, and the fixed charge for apartments was $1.15/day.

2021 CUSTOMER RATES - LEVELIZED APPROACH

Administration is recommending that the levelized approach continue to be used to establish customer rates for 2021, based on the approved 2020 customer rates escalated by 2.7 percent. This approach results in customer rates for 2021 that are:

- comparable to the 2021 rates determined in the updated business case upon which the $93 million non-refundable cash infusion and the Blatchford Utility Fiscal Policy key financial indicators were established;
- consistent with the Blatchford Utility Fiscal Policy that requires stable consistent rate increases;
- relatively simple to understand and implement;
- lower than rates based on the pegged approach and therefore in accordance with the Blatchford Utility Fiscal Policy that customers pay at most a comparable fee to what they would elsewhere in the City of Edmonton through their energy utility bills and annual maintenance costs.

The proposed customer rates for 2021 are summarized in the table below:

Table 12: 2021 Proposed BRE Customer Rates

Rate Component		2021 Rate
Fixed Charge ($/day)		
	Townhouses	1.51
	Apartments	1.18
Variable Charge ($/kWh)		0.0262

2021 CUSTOMER RATES - COMPARISON TO BAU

As discussed in Section 3.0 above, on October 17, 2020 Council approved specific rate setting principles to be added to the Fiscal Policy, including the following principle that multiple years be used for comparison of Blatchford utility customer rates going forward to ensure they remain competitive.

> "7. Customer rates based on the forecast cost of providing service will be assessed annually to ensure they remain competitive with other longer-term heating and cooling options.
>
> a. The Utility will strive for customers to pay at most a comparable fee to what they would elsewhere in the City of Edmonton through their energy utility bills and maintenance costs.
>
> b. The assessment will take into account the longer-term nature of utility infrastructure being used to provide services to customers, and market fluctuations that may occur annually in the commodity price of gas and electricity relative to the stable cost of providing thermal energy from the Blatchford District Energy Sharing System."

Taking this principle into account, Administration has determined the BAU amounts for 2021 using the same methodology utilized in the 2019 and 2020 Rate Filings except a five year average (2019 to 2023 forecast) of annual BAU bill amounts was used to "peg" what utility bills would be elsewhere in the City of Edmonton, rather than a single year as was used in the 2019 and 2020 Rate Filings. Administration used a five year average BAU bill amount to peg utility bills outside of Blatchford in order to take into account market fluctuations that may occur in commodity prices and potential swings in year to year electric and natural gas utility bills outside of Blatchford. In addition, to calculate the 2021 BAU amounts, BRE updated the following assumptions that were utilized to calculate the BAU bill amounts in the 2020 Rate Filing:

- The continued use of the current electricity and natural gas regulated rate options (instead of competitive contracts) for determining both the electricity and natural gas portions of the BAU bill amounts for each year.
- The latest forecast (third quarter of 2020) of long term natural gas and electricity prices were utilized to determine the variable electricity and natural gas rates in the BAU bill calculations.

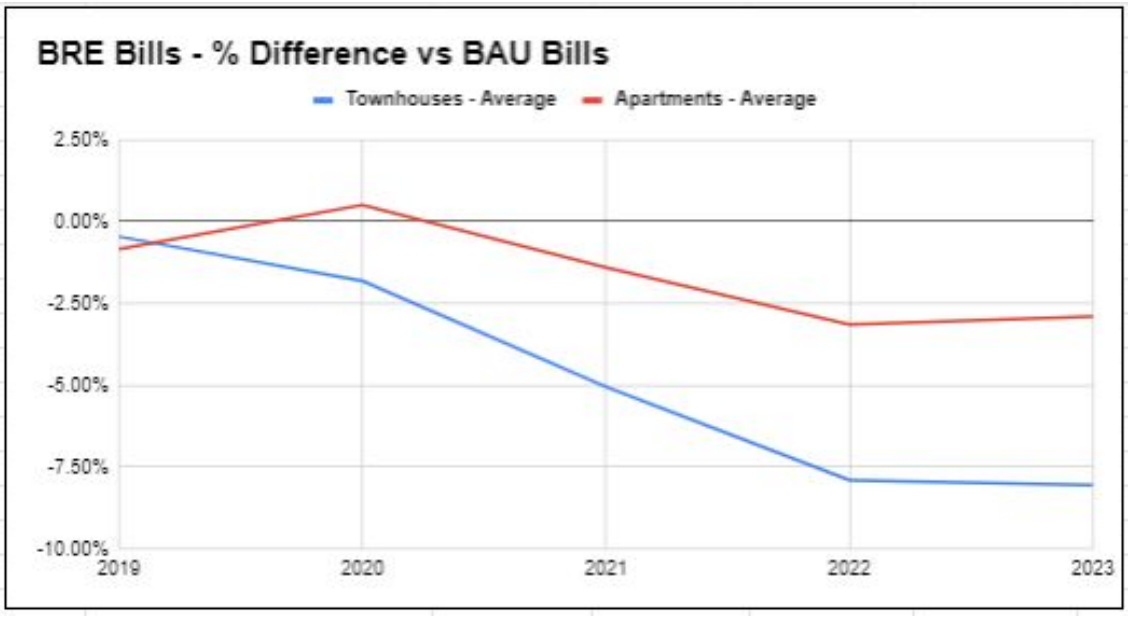
- Carbon tax rates of:
    - $35/tonne in 2019 (Provincial rate),
    - $30/tonne in 2020 (current Federal rate),
    - $40/tonne in 2021 (published Federal Rate for 2021)
    - $50/tonne in 2022 and 2023 (published Federal Rate for 2022 and beyond)

The following table provides a summary of the average annual energy costs (including utility bills and maintenance costs) for a BRE customer compared to a BAU customer, based on the projected five year costs from 2019-2023, for townhouse and apartment customers at Blatchford.

Table 13: Summary of Five -Year Average Annual BRE/BAU Bill and Maintenance Costs for a Typical Customer ($)

	Blatchford Customers			Business as Usual Customers			Difference	
Customer Type	5 Year Average BRE Energy Utility Bill Amount	BRE Maint. Costs	BRE 2021 Energy Utility bill and Maintenance Costs	5 Year Average BAU Energy Utility Bill Amount	BAU Maint. Costs	5 Year Average Annual BUA Energy Utility Bills & Maintenance Costs	BRE less BAU ($)	BRE less BAU (%)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
			=(1) + (2)			=(4) + (5)	=(3) - (6)	=(7) / (6)
Townhouse	$ 1,340	$ 440	$ 1,780	$ 1,564	$ 289	$ 1,853	$ (73)	-3.9%
Apartment	$ 1,178	$ 297	$ 1,475	$ 1,054	$ 444	$ 1,498	$ (23)	-1.5%

The graph below shows the percentage difference between utility bills for BRE customers vs BAU utility bills for the five year period 2019 to 2023, utilizing approved BRE rates for 2019 and 2020, the proposed rates for 2021 and rates for 2022 and 2023 based on the levelized approach of increasing rates 2.7 percent per year.



BRE Rate Schedules with the proposed end use customer rates have been included in Appendix 5.0.

As BRE grows and matures and more operational information and consumption data become available, BRE will investigate alternatives in future rate filings to the single rate class, two component rates proposed in this Rate Filing, such as:

- Splitting the current single rate class into separate townhome and apartment rate classes.
- Adding rate classes as different end use customers (e.g. commercial/retail/office, institutional (e.g. NAIT), industrial, etc.) connect to the DESS.
- The option of setting rate classes based on a size (MW) or consumption (MWh) differentiation rather than end use.
- Implementing separate rate components for heating and cooling.
- Implementing a seasonal or time of use component.
- Adding a demand (e.g. $/kW) component to certain rate classes to encourage efficient use of the system.
- Utilizing an inclining block variable charge to encourage conservation, and
- Basing the fixed charge on a $/square meter per month basis rather than a $/customer/month basis.

BRE will continue to gain experience with operating and maintaining the DESS system and gathering actual metered customer usage data (e.g. total consumption, consumption patterns, time of use, etc.) before implementing any of the alternatives noted above.

INFRASTRUCTURE FEE

BRE has implemented an Infrastructure Fee to charge the builders that connect residences and commercial developments to the DESS. For residential units, an infrastructure fee for 2020 of $1,750 per unit was approved and is currently in place. For each commercial development, the infrastructure fee for 2020 is $20 per square meter of floor space. This fee creates an additional source of revenue for BRE that would otherwise need to be funded by utility rates or the non-refundable cash infusion. To establish the proposed Infrastructure Fee for 2021, BRE is proposing to increase the approved 2020 infrastructure fee by 2.7 percent, the same increase that is being proposed for BRE's end use customer rates. The proposed Infrastructure Fee for 2021 is shown in the table below:

Table 14: 2021 Proposed Infrastructure Fee

Infrastructure Fee	2021 Fee
Residential - all ($)	$ 1,797.25
Commercial ($/m^2)	$ 20.54

The proposed Infrastructure Fee Schedule is included in Appendix 5.0.

6.3 Revenue on Proposed Rates

RATE REVENUE

The proposed rates for 2021, as discussed above, were applied to the 2021 forecast customer billing determinants (i.e. number of customers/accounts and total consumption) to derive the 2021 forecast rate revenue. The proposed 2021 customer rates were increased by 2.7 percent for 2022 and applied to the 2022 forecast billing determinants to derive the 2022 forecast rate revenue. **BRE is seeking approval for only the 2021 end use customer rates in this Rate Filing**.

INFRASTRUCTURE FEE REVENUE

The proposed Infrastructure Fee, as outlined above, was applied to the 2021 forecast number of customer connections to derive the 2021 forecast Infrastructure Fee revenue. The proposed 2021 Infrastructure Fee was increased by 2.7 percent for 2022 and applied to the 2022 forecast number of new customer connections to derive the 2022 forecast Infrastructure Fee revenue. **BRE is seeking approval for only the 2021 Infrastructure Fee in this Rate Filing**.

The following table summarizes the forecast Rate Revenue and Infrastructure Fee Revenue for the forecast period.

Table 15: Forecast Rate and Infrastructure Fee Revenue

Item	2019 Actual	2019 Approved Budget	2020 Rate Filing	2020 Current Forecast	2021 Proposed Rate Filing	2022 Current Forecast
Revenue						
Rate Revenue	-	77.2	24.1	3.3	34.2	82.8
Infrastructure Fee Revenue	7.0	458.5	75.3	29.8	104.2	206.7
Total Revenue	**7.0**	**535.7**	**99.3**	**33.0**	**138.4**	**289.5**

6.4 Deferral Account and Interest on Financing

As shown in Table 2 in Section 5 above, BRE will realize a revenue shortfall each year during the forecast period. Section 2.1 C of the Fiscal Policy states: "Where the Utility's cash position is insufficient to meet cash flow requirements, the Utility will borrow from the City of Edmonton on a short term basis, with the interest being paid by the Utility at an interest rate that compensates the City of Edmonton reflecting the Fund Balance were the cash was drawn." Accordingly, it is assumed that the annual revenue shortfall during the forecast period will be financed by short-term debt obtained from the City of Edmonton at prevailing rates. The annual revenue shortfall amount and the interest expense associated with the deferral account balance each year are shown in the table below.

Table 16: Annual Revenue Shortfall and Interest Expense

	2019	2020	2021	2022
Item	Actual	Current Forecast	Proposed Rate Filing	Current Forecast
Total Revenue	7.0	33.0	138.4	289.5
Total Revenue Requirement	853.2	996.0	1,205.3	1,331.1
Annual Revenue Surplus (Shortfall)	(846.2)	(963.0)	(1,066.9)	(1,041.5)
Deferral Account Opening Balance	-	(856.7)	(1,856.6)	(2,995.1)
Annual Revenue Surplus (Shortfall)	(846.2)	(963.0)	(1,066.9)	(1,041.5)
Deferral Account Closing Balance	(846.2)	(1,819.8)	(2,923.4)	(4,036.7)
Annual Interest Costs	**(10.6)**	**(36.8)**	**(71.7)**	**(114.3)**
Deferral Account Closing Balance Including interest Costs	**(856.7)**	**(1,856.6)**	**(2,995.1)**	**(4,151.0)**

It is expected that as BRE grows and more customers are connected to the system that annual customer revenue will exceed BRE's annual revenue requirement and the short term debt obtained to cover the deferral account balance will be paid back to the City of Edmonton.

6.5 Bylaw 17943

The purpose of this bylaw is to:

(a) Regulate connections between building mechanical systems and the Blatchford district energy sharing system;
(b) Regulate access to the Blatchford district energy sharing system;
(c) Prevent damage or misuse of the Blatchford district energy sharing system; and
(d) Prescribe fees and charges related to the Blatchford district energy sharing system.

Bylaw 17943 was approved by City Council in December 2018. Schedule B of Bylaw 17943 contained the Customer Rates and Infrastructure Fee for 2019. Bylaw 17943 was amended by Bylaw 19062 in December 2019 to reflect new Customer Rates and Infrastructure Fee for 2020, that are currently effective for the period January 1 to December 31 2020. Financial and Corporate Services Report FSC00139, to be presented at the December 3, 2020 Utility Committee Meeting, recommends the approval of Bylaw 19494, to amend Blatchford Renewable Energy Utility Bylaw 17943 to reflect the new fees and charges outlined in this Rate Filing effective January 1, 2021.

7.0 Appendices

- 1.0 ETS Justification
- 2.0 Fiscal Policy
- 3.0 2021-2024 Business Plan
- 4.0 Minimum Filing Requirements Schedules
- 5.0 Proposed 2021 Rate Schedules