

NO: R231

COUNCIL DATE: November 20, 2017

REGULAR COUNCIL

TO: **Mayor & Council**

DATE: **November 15, 2017**

FROM: **General Manager, Engineering**

FILE: **5514-102**

SUBJECT: **Surrey City Energy Update - Expert External Rate Review Panel**

RECOMMENDATION

The Engineering Department recommends that Council receive this report as information.

INTENT

The intent of this report is to provide an update on the financial performance of Surrey City Energy ("SCE") and the City's District Energy ("DE") utility, as well as to present the proposed utility rates for 2018.

BACKGROUND

At its Regular meeting on December 16, 2013, Council adopted the recommendations of Corporate Report No. R246; 2013 that authorized District Energy Rate Setting Policy, No. H-53 (the "Policy"). The Policy forms the basis for the establishment and adjustment of the City's thermal energy utility rates and includes a series of Rate Setting Principles that are to be observed by staff while developing and updating the rates. This report also authorized the establishment of the Expert External Rate Review Panel (the "Panel").

The Policy is based on the following Rate Setting Principles:

- Cost Recovery;
- Rate Competiveness;
- Return on Investment;
- Shortfall Recovery;
- Low-Carbon/Renewable Energy Targets; and
- Fairness.

In addition to its use by staff in establishing the rates, these Rate Setting Principles are also observed by the Panel in its annual rate review.

DISCUSSION

Surrey City Energy Progress Update

In April 2014, Council approved the award of the construction of a temporary natural gas boiler plant located at 10357 – 133 Street. The plant has been in operation since late 2014, providing thermal energy service to new buildings in the area west of City Hall. The first two buildings to be serviced by this plant were the Rize Alliance’s “Wave” project at 13303 - 103A Avenue (Application No. 7811-0075-00) and Bosa’s “University District” development at 13388 - 104 Avenue (Application No. 7812-0349-00). Construction was completed in the summer of 2017 to extend the DE network to provide thermal energy services to Century Group’s “3 Civic Plaza” development at 13483 – 103 Avenue (Application No. 7811-0334-00), which included the integration of the DE network with the City Hall geexchange system, providing renewable low-carbon heat from the ground under the City Hall parkade.

With Reliance Properties’ “Prime on the Plaza” development at 13438 - 103 Avenue (Application No. 7812-0327-00) and Weststone’s “Evolve” development at 10322 - 133 Street (Application No. 7812-0325-00) under construction, demand on the DE system will soon exceed the capacity of the temporary energy plant located at 10357 – 133 Street. In order to meet this demand, construction of the West Village District Energy Centre is currently underway. The West Village District Energy Centre will be a permanent natural gas-fired boiler facility that will serve as the backbone of the DE system and is being constructed on the site of the existing temporary energy plant.

In May 2015, Council approved the award of the construction of a second temporary natural gas boiler plant located at 9804 Whalley Boulevard. This plant is required to service new developments in the area around the King George SkyTrain Station. A separate DE network has been established in the area, and thermal energy services are now being provided to Concord Pacific’s “Park Avenue” development at 13750 - 100 Avenue (Application No. 7810-0258-00). It is anticipated that this plant will be in operation for approximately four years before it is replaced by a piped connection to the West Village District Energy Centre.

While the initial phase of the DE system has relied on natural gas, staff are working on plans to integrate various sources of renewable energy over time, including renewable natural gas from Surrey’s ReThink Waste Program, heat generated from clean waste wood, and waste heat from buildings and the City’s wastewater collection system. With the recent pipe expansion project completed in 2017, SCE is now using heat extracted from the ground using excess capacity in the City Hall geexchange system. The City’s Sustainability Charter 2.0 includes targets for the amount of carbon-based fuel used to heat the DE network, and staff are actively working to meet these targets.

Proposed 2018 Rates

In order to ensure that SCE is able to recover its long-term costs, staff will be recommending to the Finance Committee as part of the 2018 Five Year (2018-2022) Financial Plan – Utilities and Other Self-Funded Programs that the 2018 SCE rates be increased as shown in Table 1 and Table 2. The proposed rate increase is necessary to ensure that SCE is able to recover its long-term costs. This rate increase would result in an annual cost increase of \$19 for a 65m² unit that consumes an average of 6.8 MWh/year.

Table 1 - Proposed Rate Increase (Levy)

	Class 1		Class 2		% Increase
	(\$/m ² /year)	(\$/m ² /day)	(\$/kW/year)	(\$/kW/day)	
2017	6.39	0.0175	91.494	0.2506	
2018 (proposed)	6.55	0.0179	93.800	0.2569	2.52%

Table 2 - Proposed Rate Increase (Charge)

	(\$/MWh)	% Increase
2017	51.66	
2018 (proposed)	52.96	2.52%

Expert External Rate Review Panel

The Panel has completed its review of the proposed 2018 rates. Based on this review, the Panel has concluded that the proposed rate increase for 2018 is appropriate and that it is consistent with Council’s Rate Setting Principles. A copy of the Panel’s endorsement of the 2018 rates is attached as Appendix “I”.

External Consultation

Every year in advance of the rate review process, staff provide the development industry an opportunity to submit questions or concerns regarding the rates or rate structure for the Panel’s consideration. There were no items raised by the development community this year; however, there was a concern raised by a building owner and current customer regarding the way the Levy is applied to Class 2 customers. This customer would like to see an opportunity for the Levy to be adjusted based on actual measured peak demand rather than a fixed Levy based on the estimated peak demand that was established by their engineer at the time of building design.

Staff reviewed this concern and agreed that there was merit for a reduction in the Peak Heat Demand billing determinant for this customer. Staff provided recommendations for a new policy which would allow for a downward adjustment of the Peak Heat Demand for a Class 2 customer in such cases to the Panel during the rate review process. While the Panel agreed that there is justification for the adjustment of the Peak Heat Demand for this particular customer, it would be premature to establish a policy that would apply to all customers without further investigation and analysis on the potential impact of such a policy when applied to all future customers.

The Panel further recommended that staff review possible alternatives to the current rate structure to allow for a broader policy for periodic adjustment of the Peak Heat Demand without putting the utility at risk of not being able to recover its fixed costs.

Although the Panel thought it was premature to establish a policy, staff, utilizing provisions in the District Energy System Bylaw, will be making an adjustment to the Levy for this customer based on their actual measured peak demand. Staff have advised the customer of their pending Levy adjustment.

Next Steps

Having received the Panel's endorsement of the proposed 2018 rate as set out in this report, the City Clerk will bring forward the necessary Amendment Bylaw for Council's consideration in the near future.

SUSTAINABILITY CONSIDERATIONS

The operation of a DE system in the City Centre supports the objectives of the City's Sustainability Charter. In particular, this initiative relates to the Sustainability Charter themes of Built Environment and Neighbourhoods, and Infrastructure. Specifically, these actions support the following Desired Outcomes:

- Buildings and Sites DO11: Surrey is at the forefront of sustainable and restorative building design and technology;
- Buildings and Sites DO13: Buildings are healthy and energy and resource efficient;
- Buildings and Sites SD13: Continue to support low carbon district energy networks; and
- Energy and Climate DO9: Energy is produced locally, using distributed and renewable sources when economically feasible.

CONCLUSION

SCE has made significant progress towards its objectives of developing an integrated DE system focused in City Centre. As part of its annual rate review, the External Rate Review Panel has concluded that the proposed rate increase for 2018 is appropriate and that it is consistent with Council's Rate Setting Principles. Based on the above discussion, it is recommended that Council receive this report as information.

Fraser Smith, P.Eng., MBA
General Manager, Engineering

JA/JO/cc

Appendix "I" – Panel Endorsement of 2018 Rates

November 3rd, 2017

City of Surrey, Engineering Department
13450 104th Avenue
Surrey, B.C. V3T 1V8

Attn: Mr. Jason Owen, District Energy Manager

Dear Sir:

Re: Letter of Endorsement for proposed 2018 Surrey City Energy
Customer Rates

By this letter, the District Energy Expert External Rate Review Panel (Rate Review Panel, Panel) recommends acceptance of the rates for the District Energy System operated by Surrey City Energy (SCE) for the 2018 calendar year, as proposed.

The Rate Review Panel was established in 2014 to provide objective, external expert advice to the City regarding the rate structures and thermal energy rates to be charged by SCE to its customers, to ensure alignment with the City of Surrey's (City's) District Energy Rate-Setting Policy (Policy). The Policy requires that rate structures and rates be set to accord with principles relating to:

1. Cost Recovery
2. Rate Competitiveness
3. Return on Investment
4. Shortfall Recovery
5. Low Carbon/Renewable Energy Sources, and
6. Fairness

These principles cannot be viewed in isolation but must be balanced against one another.

The Panel met with City staff on September 14, 2017 and again on October 12, 2017 to review the operations of SCE over the past year as well as proposed rates for 2018. Projections of potential future costs and rates were also examined, under various scenarios relating to development growth and more stringent Building Code requirements.

As noted in prior reports, SCE remains a young utility and is therefore not expected to recover all of its significant, upfront capital investment costs initially, but over a longer, more realistic time period as additional customers are added to the system. Costs in excess of revenues in the earlier years are accounted for in

a deferral account, the "Rate Stabilization Reserve Account". This account is currently projected to peak at \$41.9 Million in 2034, after which time it will begin to decrease. It is projected to be at or near zero in thirty years. As costs and revenues collected in early years will have a significant impact on the balance in this deferral account, the Panel continues to recommend that staff carefully monitor the projected balance in this account and the timeline for its recovery, on an ongoing basis.

As noted, cost recovery is dependent on the utility's revenue stream, which is in turn, at least partially dependent upon the number of customers taking service from the District Energy System as well as their energy consumption. In this regard, the Panel recommends that staff continue to carefully monitor the timeline respecting anticipated completion and occupancy of any new buildings that are expected to connect to SCE. It is also recommended that staff pay close attention to energy consumption rates, as proposed changes relating to the B. C. Building Code will likely affect the thermal efficiency of new buildings, lowering energy consumption, other things equal.

For the past three years, rate competitiveness has been determined using BC Hydro rates as a benchmark. These forecast rates remain a useful comparison, as electricity is a common heating source in any number of multi-unit residential buildings. The BC Hydro benchmark rate for 2018 is again determined assuming a 50%-50% split between the (lower) Tier 1 and (more expensive) Tier 2 rates. For this year and future years, rates for natural gas and other district energy systems will also be considered as benchmarks for comparison. The Panel notes that the forecast rates for SCE are slightly less than those forecast for BC Hydro and basically in line with those of other, similar thermal district energy systems.

In terms of Return on Investment, the Panel is satisfied that the use of an assumed Total Financing Cost which exceeds the City's actual borrowing cost (the utility is 100% debt financed) will result in a positive return to the City. This return is below that which would be allowed to a private utility by the BC Utilities Commission, but is not unreasonable given SCE is a city-owned utility with societal goals and objectives.

This year, the interest rate calculation used to determine cost of capital is consistent with the City's actual cost of borrowing. This has resulted in a reduction in the forecast interest cost for 2017. However, the Panel understands that the City's Financial Services Division will be undertaking a review of its internal borrowing policy for utilities such as SCE which are projected to be in a shortfall position for a number of years, to determine a fair interest charge.

As well, the Panel notes that the 2017 forecast of depreciation expense is significantly lower than budgeted. The Panel understands that this reduction in forecast depreciation expense is attributable to a change in methodology for

recognition of in-service capital expenditures. The utility's assets when viewed as being in service should provide service to the ratepayer such that they are considered "used and useful". To minimize fluctuating rates, consistent methodology for accounting for capital expenditures and in-service dates should be considered. The Panel recommends further review of in-service methodology going forward to ensure that the utility's rate base is neither overstated nor understated and consistency with the "used and useful" principle.

As noted above, the shortfall between revenues and costs in the early years will be balanced out over a thirty year time frame. This is important for "inter-generational equity" so that early users of the system do not overpay for their use, and late-comers do not get a "free ride". Staff has modeled the shortfall recovery using both the "Deferral Account Model" and a "Cash Account Model". The Panel believes that both models provide useful information and that staff should continue to monitor the shortfall using both methods.

The Panel notes that the costs relating to the current plan to introduce biogas into the system, the use of excess heat from the geo-exchange system used at City Hall, as well as the future construction and operation of a biomass facility have been included in the SCE pro- forma model. The model indicates that these measures will result in a carbon emissions intensity which is consistent with the City's carbon intensity target.

In terms of fairness, the Panel is satisfied that staff is continuing to monitor costs attributable to each customer class (i.e. commercial and residential) to ensure that there is no cross-subsidization.

Staff has also recommended the adoption of a policy to address the concern of a Class 2 (commercial) customer who is paying a greater levy, or capacity charge, than would otherwise be payable were it based on actual use, as this charge is largely determined in advance, based on the capacity requested at the time of building design.

The Panel believes it is premature to establish a policy for Adjustment of Peak Heat Demand for all current and future Class 2 Customers as outlined in the Corporate Report. This policy could potentially have significant ramifications in revenue should multiple buildings apply for rate relief under it. The policy also does not reflect costs already incurred by SCE in connecting customers to the utility. The Panel recommends further investigation and analysis on the potential impact of such a policy, and alternative methods of achieving customer fairness including switching the current two charge rate (energy and connected capacity) to a three charge rate (energy, connected capacity, and peak demand).

The Panel notes that the financial model developed by staff has been refined to improve its flexibility and granularity. This refinement makes it easier to identify and monitor key risk factors. In this regard, staff has identified risk factors

relating to changes in Code requirements which may affect the energy efficiency of new buildings, in addition to risk factors relating to rate of load growth. The Panel is satisfied that staff is continuing to monitor these risk factors and has identified options to mitigate the effect of a reduction in demand on rates should any of these risks come to pass.

In summary, the Panel finds that the proposed rates for 2018 are reasonable and represent an acceptable balance of the rate-setting principles set out above.

The Panel has found City staff to be most cooperative, helpful and thorough throughout this review.

Yours very truly,

A handwritten signature in black ink, appearing to read 'AR', with a stylized, cursive flourish extending to the right.

Alison Rhodes, Panel Chair.