

NO: R240

COUNCIL DATE: November 7, 2016

REGULAR COUNCIL

TO: **Mayor & Council**

DATE: **November 2, 2016**

FROM: **General Manager, Engineering**

FILE: **5514-102**

SUBJECT: **Surrey City Energy –Update and 2017 Rate Review**

RECOMMENDATION

It is recommended 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), the City's District Energy (DE) utility and to present the proposed utility rates for 2017.

BACKGROUND

At its Regular meeting on January 24, 2011, Council adopted the recommendations of Corporate Report No. R013; 2011 that authorized staff to establish a DE Utility for the purpose of designing, constructing and operating a DE system in Surrey City Centre.

At its Regular meeting on June 7, 2012, Council adopted the recommendations of Corporate Report No. R123; 2012 that resulted in the adoption of *District Energy System By-law, 2012, No. 17667*. This By-law established the DE requirements for new development in Surrey City Centre.

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 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 rates 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 building to be serviced by this plant is Rize Alliance’s Wave Project at 13303 - 103A Avenue. Construction is currently underway to extend the DE network to provide thermal energy services to Bosa’s University District development at 13388 - 104 Avenue. Subsequent to completion of this project, the DE network will be further extended to connect Century Group’s 3 Civic Plaza development at 13483 - 103 Avenue and the DE network will be integrated with the City Hall geoexchange system, providing renewable low-carbon heat from the ground under the City Hall parkade.

With King George Development’s The Prime development at 13438 - 103 Avenue and Weststone’s Evolve development at 10322 - 133 Street under construction, demand on the DE system will soon exceed the capacity of the temporary energy plant located at 10357 –133 Street. As such, the City is currently engaged in the detailed design of the West Village Energy Centre which will be a permanent facility that will serve as the backbone of the DE system. The West Village District Energy Centre will be constructed on the site of the existing temporary energy plant located at 10357 –133 Street which, upon completion of the permanent facility in 2018, will be relocated to another location within the City Centre to support future growth of the DE system.

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. 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 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 extracted from the ground using the City Hall geoexchange system, heat generated from clean waste wood, and waste heat from buildings and our wastewater collection 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 2017 Rates

Customer rates are based on a fixed capacity charge (the “Levy”), and a variable energy charge (the “Charge”). For the first 3 years of operation (2015, 2016 and 2017), the Levy and Charge are set at a level which produces an effective rate that matches the BC Hydro benchmark for a typical full-service residential customer.

In accordance with previous commitments to set rates based on the BC Hydro benchmark for the first 3 years of operation, staff recommend that both Levy rate component and Charge rate component be increased by 3.5% for 2017. The proposed rate increase is equivalent to the planned 3.5% increase to BC Hydro’s residential rate for 2017 and 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 \$26 for a 65m² (700 square foot) residential dwelling unit that consumes an average of 6.8 MWh/year.

Proposed Rate Increase (Levy)

	Class 1		Class 2		% Increase
	(\$/m ² /year)	(\$/m ² /day)	(\$/kW/year)	(\$/kW/day)	
2016	6.18	0.0169	88.40	0.2421	
2017 (proposed)	6.39	0.0175	91.494	0.2506	3.5%

Proposed Rate Increase (Charge)

	(\$/MWh)	(\$/MWh)	% Increase
	2016	49.92	49.92
2017 (proposed)	51.67	51.67	3.5%

Expert External Rate Review Panel

The Panel has completed their review of the proposed 2017 rates. Based on their review, the Panel has concluded that the proposed rate increase for 2017 is appropriate and that it is consistent with Council’s Rate Setting Principles. A copy of their endorsement of the 2017 rates is attached as Appendix “I”.

External Consultation

Every year, in advance of the Rate Review process, staff give the development industry an opportunity to provide 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 future 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 demands rather than a fixed Levy based on the estimated peak demand that is modeled at the time of building design.

While staff see merits in this approach, it is worth noting that the investments that SCE is making are based on the estimated peak heating demand provided by the development and their mechanical engineering consultants. Given the limited number of customers SCE currently has, the utility does not have sufficient information to determine if estimated peak heating demands are close to their actual peak. Staff will be reviewing this opportunity in the future as more operational information is collected. In the meantime, staff are working closely with developers and their mechanical engineering consultants to ensure that their estimated peak demands do not overestimate actual conditions in order to ensure that appropriate investments are made by SCE and that an appropriate Levy is being charged.

Next Steps

Having received the endorsement of the proposed 2017 rate, 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, these acquisitions relate to the Sustainability Charter themes of Built Environment and Neighbourhoods and Infrastructure. Specifically, these actions support the following Desired Outcomes:

- Buildings and Sites DO 11: Surrey is at the forefront of sustainable and restorative building design and technology;
- Buildings and Sites DO 13: Buildings are healthy and energy and resource efficient;
- Buildings and Sites SD 13: 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 2017 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/clr/ras

Appendix "I" – External Rate Review Panel Letter of Endorsement

October 28, 2016

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

Attn: Mr. Jason Owen, District Energy Manager

Dear Sir:

Re: Letter of Endorsement in respect of proposed 2017 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 and rate structure for the District Energy System operated by Surrey City Energy (SCE) for the 2017 calendar year as proposed, and as attached.

The Rate Review Panel was established in late 2014 to provide objective, external, expert advice to the City in respect of the rate structure and thermal energy rates to be charged by SCE to its customers, to ensure consistency with the City's District Energy (DE) Rate-Setting Policy (Policy). The Policy requires that the rate structure and rates be set in accordance 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

all of which must necessarily be viewed together and balanced against each other.

The Panel met with City staff on September 20, 2016 and October 05, 2016 to review the operations of SCE and proposed rates for 2017, as well as projections of future costs and revenue requirements over a thirty year time horizon.

As SCE is a new, young utility, it is not expected to recover all its significant, upfront costs initially, but over a longer, more realistic time period as more customers are added to the system. Costs in excess of revenue in the earlier years are accounted for in a deferral account, known as the "Rate Stabilization Reserve Account". This

account is currently projected to peak at \$10.9 Million in 2027, at 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 earlier years will have a significant impact on the balance in this deferral account and the timeline for its recovery, the Panel recommends that the City continue to carefully monitor the 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 significantly affected by the number of customers taking service from the District Energy System. In this regard, the Panel recommends that the City continue to carefully monitor the timeline respecting anticipated completion of construction of any new buildings that are expected to connect to SCE, and their occupancy.

Rate competitiveness is currently assessed in relation to BC Hydro rates, which are a common heating source in multi-unit residential buildings. The BC Hydro benchmark rate is determined assuming 50% of the energy is drawn at the lower Tier 1 residential rate with the remaining 50% at Tier 2. The Panel is satisfied that the proposed rates are consistent with the BC Hydro benchmark, which is the agreed benchmark for SCE's first three years of operation.

City staff also reviewed the proposed SCE rates against the rates of other thermal heating systems. The Panel is satisfied that the proposed rates for 2017 are also in line with those charged by other District Energy Systems.

The Panel agrees with the City that any Return on Investment included in future rates should be no less than the City's actual cost of borrowing, and no greater than any rate of return allowed to a private investor from time to time by the British Columbia Utilities Commission.

The Panel also agrees that the rates to be charged to the different customer classes (being residential and commercial) are fair and equitable. The Panel encourages the City to continue to monitor the costs attributable to each customer class as usage of the SCE system increases. This is particularly the case for commercial customers, which may have very different needs and usage levels, such that usage is more difficult to forecast. The Panel expects that forecasting will improve as more customers are added to the system and more information becomes available.

The Panel also reviewed the sensitivity of the financial projections to different risk factors, using the financial model developed by the City. The Panel recommends that the model be refined to improve its granularity and flexibility so that key risk factors can be identified and modeled more readily.

In summary, the Panel finds that the proposed 2017 rates are reasonable and represent an acceptable balancing of the often conflicting rate-setting principles set out above.

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

Yours very truly,

A handwritten signature in blue ink, appearing to read "A. Rhodes". The signature is fluid and cursive, with a large initial "A" and a long, sweeping tail.

Alison Rhodes, Panel Chair