



November 4, 2022

Hon. Craig Simailak  
Minister Responsible for the Qulliq Energy Corporation  
Legislative Assembly of Nunavut  
P.O. Box 2410  
Iqaluit, NU X0A 0H0

Dear Minister Simailak,

RE: Heat Rate Formula Revision Application (the Application), Utility Rates Review Council of Nunavut's Report 2022-03.

By letter dated September 22, 2022, the Qulliq Energy Corporation (QEC) applied to the Minister Responsible for QEC for approval of its request to revise the residual heat rate formula used to charge district heating system customers. QEC requested approval to reduce the cost factor from the currently approved amount of 90% to 75% effective December 1, 2022. By letter dated September 23, 2022, the Minister Responsible for QEC requested advice from the Utility Rates Review Council of Nunavut (URRC) with respect to QEC's application.

In response to the Application and the Minister's request, please find attached the URRC's Report 2022-03, respecting QEC's Heat Rate Formula Revision Application.

Yours truly,

Graham Lock, Vice-Chair  
Utility Rates Review Council of Nunavut

CC: Premier P.J. Akeeagok, Minister Responsible for the URRC  
Jimi Onalik, Deputy Minister, Executive and Intergovernmental Affairs  
Rick Hunt, President, Qulliq Energy Corporation  
Monica Eil-Kanayuk, Chair, URRC  
Laurie-Anne White, Executive Director, URRC



**Report to the Minister Responsible for the Qulliq Energy Corporation on:  
Heat Rate Formula Revision Application**

**Report 2022-03**

**November 4, 2022**

## UTILITY RATES REVIEW COUNCIL OF NUNAVUT

### MEMBERS

Graham Lock Vice-Chair

Bill Williams Member

### SUPPORT

Laurie-Anne White Executive Director

Wade Vienneau Consultant

## LIST OF ABBREVIATIONS

DHS	District Heating System(s)
ETS	Energy Transfer Station
GN	Government of Nunavut
GRA	General Rate Application
IR	Information Request
kWh	Kilowatt-Hour
L	Litre
O&M	Operation and Maintenance
QEC	Qulliq Energy Corporation
QEC Act	<i>Qulliq Energy Corporation Act</i>
URRC	Utility Rates Review Council of Nunavut
URRC Act	<i>Utility Rates Review Council Act</i>

## TABLE OF CONTENTS

1.0	BACKGROUND.....	4
2.0	PARTICULARS OF THE APPLICATION.....	6
3.0	PROCESS .....	8
3.1	MAJOR OR MINOR APPLICATIONS .....	8
3.2	PUBLIC PROCESS.....	8
4.0	EXAMINATION OF THE APPLICATION.....	10
5.0	URRC RECOMMENDATIONS.....	13

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## 1.0 BACKGROUND

1. Qulliq Energy Corporation (QEC), as a designated utility, is required pursuant to Section 12 of the *Utilities Rates Review Council Act* (URRC Act), to seek approval from the responsible Minister prior to imposing a rate or tariff. In this regard, Section 12 of the URRC Act provides for the application for approval of a rate or tariff as follows:
  - (1) A designated utility that desires to impose a rate or tariff shall make an application in writing to the responsible Minister for approval of the rate or tariff.

Request for advice of Review Council
  - (2) Within 15 days of receiving an application under subsection (1), the responsible Minister shall request the advice of the Review Council.

Notice to elected officials
  - (3) The responsible Minister shall give reasonable notice of a request for advice under subsection (2) to mayors and members of the Legislative Assembly who represent a municipality or constituency where the residents, in his or her opinion, are likely to be affected by the rate or tariff.
2. The *Qulliq Energy Corporation Act* (QEC Act) defines energy to include, among other things, “heat that is supplied through a district heating system by hot water, hot air or steam”.
3. Sections 5(1)(a) and (b) of the QEC Act states, among other things, that objects of QEC are:
  - (a) to generate, transform, transmit, distribute, deliver, purchase, sell and supply energy on a safe, economic, efficient and reliable basis;
  - (b) to plan and provide for Nunavut’s long term needs for affordable energy, taking into consideration Nunavut’s desire to enhance energy self-reliance and to conserve energy and energy resources;
  - ...
4. Section 7(e) of the URRC Act states, among others, the purposes of the Utility Rates Review Council of Nunavut (URRC) are to advise the responsible Minister of a

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designated utility concerning the imposition of rates and tariffs in accordance with sections 11 to 18 (of the URRC Act).

5. Section 13(2) of the URRC Act states, among others, the URRC shall have regard to whether the proposed rate or tariff is fair and reasonable, considering:
  - (a) The cost of providing the service, including related financing costs.
  - (b) Any other factors set out in guidelines issued under Section 6 (of the URRC Act).
6. By letter dated September 22, 2022, QEC applied to the Minister Responsible for QEC for approval of its request to revise the residual heat rate formula used to charge district heating system (DHS) customers. QEC requested approval to reduce the cost factor from the currently approved amount of 90% to 75% effective December 1, 2022. By letter dated September 23, 2022, the Minister Responsible for QEC requested advice from the URRC with respect to QEC's application on an expedited schedule of 45 days. The URRC's consideration of these matters is set out in this report.

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## 2.0 PARTICULARS OF THE APPLICATION

7. QEC requested approval to revise the residual heat rate formula used to charge district heating system customers. QEC requested approval to reduce the cost factor from the currently approved amount of 90% to 75% effective December 1, 2022.
8. QEC operates DHS in Kugluktuk, Arviat, Pangnirtung, Iqaluit, Rankin Inlet and Sanikiluaq and is scheduled to install and commission DHS in Taloyoak in 2022. QEC noted that DHS is also commonly referred to as residual heat recovery. QEC submitted that it has 19 DHS customers in the above-mentioned communities.
9. QEC provided background in the Application regarding the residual heat rate formula. The residual heat rate formula was approved by the Minister pursuant to the QEC 2004-05 GRA and has been in use since that time with two exceptions<sup>1</sup>.
10. For reference, the approved residual heat rate formula is provided below:

$$\text{Residual Heat kWh Rate} = \frac{\text{Cost Factor} \times \text{Fuel Cost} \times \text{ETS Efficiency}}{\text{Heat Content (kWh/L)} \times \text{Average Annual Efficiency}}$$

Individual variables are set as follows:

Cost Factor	90%
Fuel Cost	local heating fuel price
Energy Transfer Station Efficiency (ETS)	95%
Net Heat Content	9.79 kWh/litre
Average Annual Efficiency	0.70

11. QEC submitted that on or around 2009 a DHS customer requested that their DHS system be taken out of service. QEC added that revenue from residual heat sales has been declining from \$2.4 million in 2008/09 to about \$0.5 million in 2020/21.
12. QEC stated that factors contributing to the decline in sales include: marginal benefit for a somewhat unpredictable service with no guarantee of continuity; no financial

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<sup>1</sup> Kugluktuk uses a grandfathered 60% cost factor, and one other customer uses a 75% cost factor.



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benefit from the DHS system; changes in heating fuel prices; system outages due to maintenance and repairs.

13. QEC submitted that a reduction in the 90% cost factor is necessary in order to retain and attract new DHS customers. QEC proposed a 75% cost factor because many heating assets are substantially depreciated or have government contributions that offset the capital cost of the assets.
14. QEC proposed to reduce the cost factor for all DHS customers. QEC estimated that the proposed reduction in the cost factor would result in a revenue reduction of approximately \$100-150,000 annually. QEC forecast that the additional revenue from new DHS customers and reconnection of disconnected customers would exceed the reduced revenue from the reduction in the cost factor.
15. QEC stated that the revision to the residual heat rate formula would not affect QEC's electricity customers because residual heat-related capital, revenue and expenses are not included in the QEC revenue requirement. QEC noted that this is consistent with the URRC report dated February 18, 2005, and the Minister's Instruction from February 21, 2005.

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### **3.0 PROCESS**

#### **3.1 MAJOR OR MINOR APPLICATIONS**

16. Under the URRC Act, it is directed that at the sole discretion of the URRC, the URRC shall determine whether an application is either minor or major for the purposes of determining the time required for processing of the application; a minor application provides for a time limit of 90 days for the URRC to report to the responsible Minister while a major application provides a time limit of 150 days.
17. The Minister requested the URRC to consider the Application in 45 days, as an internal review. The Minister stated that all members of the legislative assembly and mayors representing the municipality where the residual heat customers are located will be informed about the Application. As well, QEC submitted it would provide a copy of the Application to all residual heat customers.
18. Considering that the effects of the Application are limited to residual heat customers and the communities they are situated in, the URRC considers the Application is minor. The need for information requests (IRs) and responses can be accommodated within an abbreviated timeframe.
19. The URRC determined that the 45-day deadline for submitting its report to the responsible Minister would be November 7, 2022 and that due to the expedited nature and narrowness of the subject of the request, that a smaller panel would be appropriate to conduct the review. A panel of two members was determined adequate to consider the Application and set by the Chair as per the URRC Act Section 6 (2.1) (b).

#### **3.2 PUBLIC PROCESS**

20. Based on the commitments made by QEC and the Minister, the URRC did not provide notice of the Application. Rather, the URRC relied on the efforts of QEC and the Minister to ensure that affected parties are informed of the proposed revision to the heat rate formula.

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21. The URRC asked for additional information from QEC regarding the Application. The URRC submitted an information request to QEC on September 28, 2022. QEC responded to the IRs from the URRC on October 17, 2022.

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#### 4.0 EXAMINATION OF THE APPLICATION

22. The URRC notes that the Application is for a reduction of the cost factor component within the heat rate formula from 90% to 75%, with an implementation date of December 1, 2022. The URRC also notes that the Application also includes background information regarding DHS and the heat rate formula, potential financial implications of a reduction of the cost factor, as well as QEC's reasons for requesting the reduction to the cost factor and the rationale for changing to a 75% cost factor. Further, QEC submitted that the revision of the heat rate formula would not affect electricity customers because residual heat revenue and expenses are excluded from QEC's electricity revenue requirement.
23. The URRC understands that the Application by QEC and the review requested by the Minister were focused on the reduction of the cost factor component within the heat rate formula.
24. The URRC based its review of the Application on aspects of the URRC Act and the QEC Act. One of the stated goals of the QEC Act is for QEC to "plan and provide for Nunavut's long term needs for affordable energy, taking into consideration Nunavut's desire to enhance energy self-reliance and to conserve energy and energy resources". Another stated goal is to "generate, transform, transmit, distribute, deliver, purchase, sell and supply energy on a safe, economic, efficient and reliable basis". The URRC reviewed the proposed reduction of the cost factor with these two goals in mind.
25. The URRC notes that the residual heat from power generation would normally be considered 'waste' and that if it is recovered to provide DHS than it contributes to the goal of conserving energy and energy resources. The use of DHS reduces the amount of heating oil that would be used by DHS customers.
26. The URRC also notes that QEC is to sell and supply energy on a safe, economic, efficient and reliable basis. Most of the review was focused on the economic and efficiency aspects of the proposed reduction of the cost factor, noting that DHS should be continued and/or increased so long as it can be done in an economic and efficient manner.

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27. The heat rate formula has not been reviewed in detail since the 2004-05 and 2010-11 GRAs. The URRC requested additional information from QEC to better understand the heat rate formula (and the individual variables), the financial implications from a reduction of the cost factor to 75% (in terms of both revenue lost from the reduction of the cost factor, and the potential revenue increase from increased sales to new and existing customers), confirmation of the treatment of DHS capital, revenue and expenses.
  28. The URRC understands that DHS is provided on a best efforts basis by QEC and that it is not a firm service. The URRC also understands that the rate for DHS is based on the market price for alternative energy sources (e.g. the price for heating fuel). QEC also provided a 2014 discussion paper in response to IR URRC-QEC-1-1 that reviewed the heat rate formula, along with the variables.
  29. The URRC's review of the formula is consistent with QEC's own review. In response to URRC-QEC-1-1, QEC submitted that it is in the process of engaging an external consultant to review the residual heat rate approach.
  30. The URRC notes that revenue from DHS has declined significantly since 2008/9 (from \$2.4 million in 2008/9 to only \$0.5 million in 2020/21). The operating expenses have been in the range of about \$0.3 million per year over the most recent 5-year period provided by QEC, while revenues decreased from \$1.1 million to \$0.5 million. So long as the marginal revenue exceeds the marginal cost of providing DHS service in the short term it should be continued, however it is concerning that revenue has decreased so drastically. The URRC agrees that QEC should take steps to increase the DHS revenue so that it contributes more to capital recovery and profit in the long run.
  31. The URRC notes in response to URRC-QEC-1-4 that QEC forecast new DHS customers and the return of previously disconnected customers if the cost factor is reduced to 75%. QEC submitted in response to URRC-QEC-1-3(h) that the City of Iqaluit has already signed a new service agreement for the resumption of service, subject to the reduction of the cost factor.

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32. The URRC notes that the 2022/23 mid-year net book value of residual heat assets is forecast to be \$6.4 million. If QEC's forecast revenue, expense and net book value for DHS is accurate then QEC should be able to recover its capital and make a profit from providing service. There is insufficient information for the URRC to determine that the proposed revision to the heat rate formula is the best/optimal approach, however it does appear to be reasonable.
  33. The URRC accepts that the heat rate formula is a reasonable approach, and that the reduction of the cost factor to 75% is reasonable for existing customers, and might potentially attract back disconnected customers.
  34. The URRC notes that QEC proposed to use the 75% cost factor for all customers (except Kugluktuk). There is insufficient information for the URRC to determine that the provision of DHS to new customers is economic with a 75% cost factor. Assuming that QEC can demonstrate the provision of DHS to new customers is economic the URRC would also consider a 75% cost factor to be reasonable for new customers.
  35. The URRC recommends that QEC reduce the cost factor used in the heat rate formula from 90% to 75% effective December 1, 2022. The URRC also recommends that QEC demonstrate (using a business case) that any new DHS projects are economic and if an application to the Minister is required.
  36. Notwithstanding, the URRC remains concerned that if DHS revenue remains perilously close to DHS O&M (i.e. marginal revenue does not exceed marginal cost) there is little contribution to fixed capital/O&M costs and return/profit. The URRC notes that QEC has forecast an increase in DHS revenue (i.e. the lost revenue from the reduction of the cost factor will be exceeded by additional revenue from new and reconnected customers). The URRC recommends that if DHS revenue does not exceed O&M then QEC should apply to the Minister if its plans to correct the situation require a rate change or the expenditure of enough capital to trigger an application.

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37. The URRC considers that the third party external review that QEC is planning will be of assistance and/or confirm that QEC is taking the correct approach by reducing the cost factor to 75%. Perhaps the review will also assess whether or not other factors may need to be addressed, such as the reliability and outages QEC noted in the Application and IR responses. The URRC recommends that QEC apply to the Minister if the results of the third party external review of DHS require a rate change or the expenditure of enough capital to trigger an application.
  38. The URRC notes that in response to URRC-QEC-1-5 that QEC has mechanisms in place to ensure DHS is provided in accordance with the approved regulatory framework and regulations. QEC submitted that revenue and cost information is tracked in the financial statements, as well as reviewed at the time of GRAs to ensure they are excluded from the electricity revenue requirement.
  39. The URRC notes that rate base amounts in the GRA expressly state that DHS amounts have been excluded. The URRC notes that QEC has been excluding revenue and expenses related to DHS, however it would be helpful if QEC provided the amount of DHS O&M and ‘shared O&M expenses’ it has deducted from its gross O&M amounts in future GRAs. The URRC recommends that QEC identify DHS amounts excluded/deducted from its revenue requirement in future GRAs.
  40. The URRC notes that QEC’s mechanisms and internal controls identified the change of the cost factor in 2018 without filing an application to the Minister. The URRC understands that no mechanisms or controls are foolproof, and that they require balance. The URRC encourages QEC to remain vigilant, in an administratively efficient manner.

## **5.0 URRC RECOMMENDATIONS**

41. Having considered the foregoing matters, the URRC recommends as follows:

### **Heat Rate Formula Revision**

- That the QEC reduce the cost factor used in the heat rate formula from 90% to 75% effective December 1, 2022.

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- The URRC recommends that QEC demonstrate (using a business case) that any new DHS projects are economic and if an application to the Minister is required.

**Future GRAs and general recommendations**

- That QEC identify DHS amounts excluded/deducted from its revenue requirement in future GRAs.
  - That if DHS revenue does not exceed O&M then QEC should apply to the Minister if its plans to correct the situation require a rate change or the expenditure of enough capital to trigger an application.
  - That QEC apply to the Minister if the results of the third party external review of DHS require a rate change or the expenditure of enough capital to trigger an application.
42. Nothing in this report shall prejudice the URRC in its consideration of any other matters respecting QEC.

**ON BEHALF OF THE  
UTILITY RATES REVIEW COUNCIL OF NUNAVUT**



**DATED: November 4, 2022**

**Graham Lock, Vice-Chair  
Utility Rates Review Council of Nunavut**