September 20th, 2017

Honourable Johnny Mike
Minister Responsible Qulliq Energy Corporation (QEC)
Legislative Assembly of Nunavut
P. O. Box 2410
Iqaluit, NU
X0A 0H0

RE: URRC Report 2017-02 on QEC's Application for approval of changes to the Terms and Conditions of Service (T&Cs) for introduction of net metering service in QEC's service area.

By letter dated June 28, 2017 QEC applied to the responsible Minister for QEC, for approval of changes to the Terms and Conditions of Service (T&Cs) for introduction of net metering service in QEC's service area. By letter dated June 28, 2017, the responsible Minister requested advice from the Utility Rate Review Council's (URRC) with respect to the Application.

In response to the Application and the Minister's request, please find attached the Utility Rate Review Council's Report 2017-02.

Yours truly,

Anthony Rose
Chairperson
Utility Rates Review Council of Nunavut

CC: Hon. Johnny Mike, Minister Responsible for the Qulliq Energy Corporation
Hon. Monica Ell-Kanayuk, Minister Responsible URRC
Darryl Taylor, Planning & Analysis, Qulliq Energy Corporation
Bruno Pereira; President Qulliq Energy Corporation
Chris D'Arcy, Deputy Minister Executive and Intergovernmental Affairs
Laurie-Anne White, Executive Director Utility Rates Review Council

UTILITY RATES REVIEW COUNCIL OF NUNAVUT
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CONSEIL D'EXAMEN DES TAUX DES ENTREPRISES DE SERVICES DU NUNAVUT

Report to the Minister Responsible for the Qulliq Energy Corporation

Respecting:

An Application by the Qulliq Energy Corporation For Approval of Changes to the Terms and Conditions of Service for Introduction of Net Metering Service

Report 2017-02

September 20, 2017

PANEL MEMBERS

Tony Rose	Chair
Graham Lock	Vice Chair
Jimmy Akavak	Member
Robbin Sinclaire	Member
Nadia Ciccone	Member

SUPPORT

Laurie-Anne White	Executive Director
Raj Retnanandan	Consultant

LIST OF ABBREVIATIONS

GRA	General Rate Application
IPP	Independent Power Producer
kWh	Kilowatt Hour
NSA	Net Metering Service Agreement
QEC	Qulliq Energy Corporation
RG	Renewable Generation
T&Cs	Terms and Conditions of Service
TIRs	Technical Interconnection Requirements
URRC	Utility Rates Review Council

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1.0 THE APPLICATION

1. Qulliq Energy Corporation (QEC), as a designated utility, is required pursuant to Section 12 (1) of the *Utility Rates Review Council Act* (Act), to seek approval from the responsible Minister for QEC (Minister), prior to imposing a rate or tariff. The responsible Minister in turn is required pursuant to Section 12 (2) of the Act, to seek the advice of the Utility Rates Review Council (URRC) on the utility's request to impose a rate or tariff.

2. By letter dated June 28, 2017 QEC applied to the responsible Minister for QEC, for approval of changes to the Terms and Conditions of Service (T&Cs) for introduction of net metering service in QEC's service area. By letter dated June 28, 2017 the responsible Minister requested advice from the URRC with respect to the Application.

2.0 APPLICATION

3. QEC proposes that under the Net Metering Program, QEC's electricity customers who own small renewable energy generators up to 10kW in capacity, would receive a kilowatt hour credit (kWh) for excess energy delivered from the customer's renewable energy generation source to the Corporation's system.

4. QEC indicates, in general, it anticipates that customers choosing to install their own renewable generation will be seeking to displace a portion of their energy requirements, but will still rely on QEC for both firm energy and demand requirements.

5. QEC indicates that it will measure the kWhs exported by the net metering customer to QEC's electrical grid and a kWh credit will be applied to the net metering customer's electrical account in each billing cycle. The account for each net metering customer will be reset to zero annually on March 31 of each year. QEC indicates that kWh credits

cannot be carried over from the previous annual period or transferred to any other account and cannot be converted to a monetary value.

6. QEC indicates that the proposed Net Metering Program is a new program in the territory available, initially, to all Residential Customers and one Municipal Corporation owned account per community. Businesses and other, non-municipal customers will not qualify for the program.

7. QEC indicates that the number of net metering customers QEC can accept will be limited by community average load caps as outlined in the proposed revisions to QEC's T&Cs.

8. QEC requested Ministerial Instruction approving revisions to QEC's T&Cs, to implement the proposed Net Metering Program.

3.0 PROCESS

9. Section 13 (1.1) of the Act provides that:

   Where, in the opinion of the Review Council, the application for the proposed rate or tariff is a minor application, the Review Council shall report to the responsible Minister within 90 days of receiving the responsible Minister's request for advice under subsection 12 (2).

10. Upon review of QEC’s application, the URRC has decided to treat the application as a minor application.

11. The URRC caused notice of the Application to be published in the Nunavut News/North, Nunatsiaq News and Nunatsiaq online during the month of July 2017.

12. QEC responded to two rounds of information requests submitted by the URRC with respect to the Application on August 11, 2017 and September 1, 2017.

13. Submissions from interested parties were received on August 11, 2017. QEC responded to parties’ comments on September 6, 2017.

4.0 SUBMISSIONS FROM PARTIES

14. The submissions of parties are summarized and paraphrased below:

    Submission #1: QEC should not only be promoting solar panel use but subsidizing it. It could be a major cost saving for consumers, reduce the amount of fuel oil use and assist in fighting climate change.

    Submission #2: This program will at least allow Nunavut to catch up a little bit with other jurisdictions. Additionally, it will at least make a small start on helping Nunavut begin to wean itself off its dependence on diesel generated power, which is good both environmentally and for community resilience purposes.

While recognizing the need for some control of loads and balancing power feeds, the 7% capacity limit seems very low compared to what should be possible and has been reached in other locations.

QEC is in the process of building or overhauling several power stations as the current ones are at the end of their useful life. These new stations should be designed and built with the understanding of alternative power generation being brought online to supplement the diesel generators and allow for higher alternative power generation capacity levels.

With few people owning homes, the potential number of customers capable of taking advantage of this program is limited. The fact that residential customers are heavily subsidized for the use of diesel power, and the program's kWh for kWh set up, means that residential customers will not see the same kind of savings for installing an alternative power system, and in fact, the government itself will potentially save as much money as the customer by not having to pay out the subsidy for any power generated by the customer, even though the full cost of the alternative power system is borne solely by the customer.

Submission #3: Hope the URRC will push QEC to expand the policy in the near future:

- Increasing the 7% limit per transformer.
- Expanding to include incentives to deploy household battery storage systems.
- Expanding to include the commercial and municipal sectors.

Recommend that the URRC commit to reviewing the effects of QEC's net metering policy bi-annually to make sure the policy is effective and remains continually ambitious.

Submission #4: The proposed net metering policy by QEC while being a very welcome step in the correct direction, it is a very small step.

A business is far more likely to be able to take advantage of the program. Having business lead the way would encourage homeowners to do so by jump starting the solar industry locally, thus lowering cost and increasing availability to qualified solar installers.

The program includes a maximum of 10kW. This is a very low number, especially if extended to businesses. If this proposal was to go ahead, would like to see a scheduled review on a bi-annual basis as this technology and market is changing on a logarithmic scale.

Submission #5: Fully support the proposal to allow Iqaluit residents to connect to the QEC grid with rooftop solar panels. It makes sense on all levels.

15. In response to the above submissions QEC provided responses which largely reflect the positions stated by QEC in the Application and information responses; QEC indicated that it would take note of the issues raised by parties.

16. The URRC finds the above submissions to be helpful and will give due consideration to the matters raised therein. The URRC's consideration of issues arising from QEC's application are set out in the sections that follow.

5.0 PROGRAM CONCEPT AND IMPLEMENTATION

17. QEC indicates that the primary purpose of the Net Metering Program is to allow customers to install renewable generation to displace their own electricity consumption; the majority of the economic benefits to the customer would be from reducing their own power bills. QEC indicates that the program is not intended to encourage customers to install substantially larger generation than required for their own use and effectively become an independent power producer. [URRC QEC 7b) and 7d)]

18. QEC indicates that it anticipates that success of the program would be reflected in the number of customers subscribing to the program in each community and the satisfaction of participating customers with the program. QEC indicates it intends to monitor these as program roll out progresses. [URRC QEC 7f)]

19. QEC indicates that it will approach the roll out of the Net Metering Program in a similar manner to the roll out of the Corporation's Iqaluit Smart Meter Project. This will include, but not be limited to the following communication methods (available in all four official languages):
    - Public Service Announcements
    - Social Media Posts
    - Bill Inserts
    - Customer Care Frequently Asked Questions or FAQs (posted to the QEC website)
    - QEC Net Metering Step by Step Connection Guide (posted to the QEC website) [URRC QEC 7c)]

20. QEC indicates that, initially, the program will be made available to all Residential Customers and one Municipal Corporation owned account per community. QEC indicates that the program might be expanded to other customers following a review of the performance of the Net Metering Program within two years of the initial

implementation date; [URRC QEC 1a), b)] the initial implementation of the Net Metering Program is scheduled for October 2017.

21. As part of the review of performance, QEC indicates that it will review uptake of the program by customers, impacts on technical performance of the Corporation's generation and distribution systems as well as impacts on costs and revenues related to the program. [URRC QEC 3a)-c)]

22. In its proposed T&Cs, QEC indicates that the overall capacity limit of the Net Metering Program for renewable energy generation in each community shall not exceed 7% of the annual average peak load of each feeder or feeder section, as evaluated by the Corporation; in addition, there would be a 10kW cap on net metering generation per site. QEC indicates these caps were selected as initial limits to ensure the Corporation can manage the impact of the program on the distribution and generation systems.

23. Regarding impact of the program on other customers and net earnings, QEC indicates it could review whether potential changes to the program are required. QEC indicates it does not have, at present, an estimate of the impact of the Net Metering Program on its earnings (or customers), but noted that NTPC's program has not resulted in net earnings impacts greater than 1% to date. [URRC QEC 9a)-d)]

URRC Findings:

24. The URRC notes QEC's view that the 7% cap is an initial limit to ensure the Corporation can manage the impact of the program on the distribution and generation systems; the URRC also notes QEC's view that although a system modelling and planning approach to performance review would assist in assessment of the hosting capacity of feeders, the planning, collection of required data, and modelling/analyzing the data would delay the rollout of the Net Metering Program. [URRC QEC 8b)]

25. The URRC is concerned that QEC is waiting on actual data over several months up to two years for its review of the 7% cap as well as performance of the system when it could undertake much of the analysis of the system and cost impacts of net metering based on estimates, system modeling and possibly the experience of other jurisdictions. The URRC is not persuaded that QEC requires up to two years for review of the 7% cap and the orderly roll out of the Net Metering Program to customers.

26. Notwithstanding the above, the URRC has no evidence respecting QEC's ability to mobilize resources required for review of the 7% cap, system performance and costs arising from net metering at this time. Therefore, the URRC will not suggest that the review of the 7% cap and the performance review be completed within a specified time. However, in the interest of removing barriers to wider adoption of net metering, the review of the 7% cap and full roll out of the Net Metering Program should be expedited and should not be delayed as much as two years. As noted in the parties' submissions, while a 10kW limit per site may be appropriate for residential sites, larger limits may be required in the case of larger operations such as commercial and municipal sites.

27. Accordingly, the URRC recommends that QEC use best efforts to expedite, review of the 7% cap by feeder (or feeder section) and the 10kW limit by site, as well as the performance review work, and considerably shorten the roll out period to enable non-discriminatory access to net metering service. It is recommended that QEC be directed to report the findings to the URRC no later than 18 months following formal approval of the Net Metering Program. If the findings indicate that changes to the T&Cs are warranted it is recommended that QEC file an application with the responsible Minister for approval of such changes.

28. The URRC notes QEC has not addressed the potential impacts of loss of load due to net metering on other customers. The URRC recommends that QEC provide the estimated impact of the loss of load and any related loss of revenue due to net metering on other

customers, together with QEC's proposals for addressing such loss of revenue at the time of the GRA following the full implementation of the Net Metering Program.

29. When QEC was requested to comment on its strategic plan for integration of net metering resources and other renewable generation into the generation mix, QEC refers only to its 2017 energy generation framework while remaining silent on the Corporation's strategic direction. [URRC QEC 7a)] The URRC considers cost effective integration of renewable resources into QEC's strategic plans and capital plans to be an important consideration in a path toward improving affordability and reducing carbon emissions. This may require progressive adoption of integration technologies such as storage, smart inverters, smart meters etc. by the utility and/ or the net metering customer, as well as providing the right price signals through appropriate rate design.

30. The URRC recommends that QEC address, at the GRA following the full implementation of the Net Metering Program, its strategic plan for successful and orderly introduction, integration and uptake of the Net Metering Program, as well as other potentially larger renewable energy programs (example IPPs) with a view to progressively reducing dependence on diesel fuel while enabling a foreseeable path towards affordability and reduction in carbon emissions, over the next five years.

6.0 PROPOSED CHANGES TO TERMS AND CONDITIONS OF SERVICE

31. QEC's proposed changes to the T&Cs and the documentation arising from introduction of net metering may be summarized as follows:

- Addition of a subsection 3.6 to the T&Cs describing the net metering service as well as corresponding changes to definitions describing Monthly Net Energy (Section 2.4 of the T&Cs);
- Addition of Schedule D to the T&Cs setting out Conditions of net metering service (Schedule D). The Schedule D Conditions refer to the requirements for net metering

customers to comply with Technical Interconnection Requirements (TIRs) as described in subsection 4.2.5 and to enter into a Net Metering Service Agreement (NSA) as described under subsection 4.2.8 of the Conditions;

- Drafts of the TIRs and NSA were provided in responses to URRC QEC 4a) Attachment 1 and URRC QEC 5c) attachment respectively

32. With respect to the TIRs, QEC indicates that the draft copy provided as part of URRC QEC 4a) Attachment 1 is still undergoing internal review and revision and the document will be publicly available, when finalized, prior to the program implementation date in October 2017. Similarly, with respect to the NSA provided as part of URRC QEC 5c) Attachment 1, QEC indicates that the draft is subject to further internal review and revision and will be finalized prior to the program being launched in October 2017.

33. The URRC examined Schedule D and the draft versions of the TIRs and the NSA in URRC QEC 9, 10 and 12. In finalizing the TIRs and the NSA, the URRC recommends the matters discussed in the above noted responses as well as the following general comments be taken into consideration by QEC:

- **Cost Responsibility:** Sections 4.1.1 and 4.1.2 of Schedule D refer to cost responsibilities; clear definitions of different types of costs, both on the system side as well as on the customer side explaining who is responsible for what types of costs, estimates of typical costs and under what circumstances customers may bear additional cost responsibility and the applicability of maximum company investment should all be explained in the NSA.
- **Liability Clause:** In Section 3 of the TIR, QEC indicates, the Guidelines in this document do not address any liability provisions agreed to elsewhere such as interconnection and operating agreements between the Renewable Generation (RG) Owner and QEC; the RG Owner is responsible for making changes to the RG Owner's facilities as required to meet new or revised standards or due to system changes.

The above statements are non-specific and may not facilitate clear understanding of the exact nature, extent, timing and probability of risk exposure on the part of the customer; the clause should clearly state the circumstances under which customers may be exposed to cost risk or other liabilities thereby enabling customers to have a clear understanding of the risk exposure and to take mitigation measures as required.

- **Fair Balance:** The tone of the documents should be written in a manner that is neutral and not appear to be unduly tilted towards protecting the interests of one party or the other. For example, in Section 7 of the NSA QEC states, "following of these guidelines shall not in any way be construed or binding QEC to connect the customer to QEC's Distribution System". QEC indicates this clause is required to address hosting capacity restrictions; however, if the intent of the clause is to address hosting capacity restrictions, then that reason should be clearly stated in place of a blanket non-binding clause.
- **Minimize Red Tape:** Entry to net metering should be facilitated as a one stop portal through QEC with a minimum of red tape. For example, Section 10 of the NSA states," the customer shall produce documents to the satisfaction of QEC that certify that the Customer Equipment has been inspected by the relevant authorities and that it meets all applicable Federal, Territorial and local construction, operation and maintenance related safety codes or requirements". Section 10 appears to impose a burden requiring net metering customers to access several portals for approvals from different authorities. A one stop portal through a single interface with QEC may help reduce red tape and thereby facilitate entry.
- **Charges and Tariffs:** For net metering customers to be fully informed, a clause stating that the value of net metering credits may increase or decrease with changes to the energy charges approved by the URRC from time to time, may be added to Section 28 of the NSA which presently provides that a net metering customer is subject to current or future charges and tariffs as approved by the URRC.
- **Minimize Financial Barriers:** Potential financial barriers to entry should be reconsidered having regard to the practice in other jurisdictions. For example, Section 30 of the NSA states "throughout the term of this agreement, the Customer shall carry

general liability insurance for third party bodily injury, personal injury, and property damage in an amount of $1,000,000.00”. It is important to balance the need to mitigate potential losses arising from net metering against this clause being a barrier to entry, having regard to experience in other jurisdictions.

- **Specificity of Cross Referenced Documents:** Where reference is made to applicable other Documents, Laws and Regulations, such documents should be specified and their implications for the customer explained. For example, Section 40 of the NSA states “the agreement shall be deemed to be amended to comply with the terms of the Other Binding Documents”. It is important to explain what the Other Binding Documents are and how they would impact net metering service.

34. The URRC recommends that QEC file the final versions of the TIR and NSA with the URRC for acknowledgement taking note of the URRC’s comments above, prior to introduction of the Net Metering Program. These documents may be subject to review by the URRC at the GRA following the full implementation of the Net Metering Program.

7.0 URRC RECOMMENDATIONS

35. Section 13 (1) of the Act states: The Review Council, shall report to the responsible Minister its recommendation that:

a) the imposition of the proposed rate or tariff should be allowed,
b) the imposition of the proposed rate or tariff should not be allowed, or
c) another rate or tariff specified by the Review Council should be imposed

36. In accordance with the above the URRC recommends as follows:

i. That the proposed changes to the Terms and Conditions of Service for introduction of net metering service in QEC’s service area be approved.

ii. That QEC use best efforts to expedite, review of the 7% cap by feeder (or feeder section) and the 10kW limit by site, as well as the performance review work, and considerably shorten the roll out period to enable non-discriminatory access to net metering service. Also it is recommended that QEC be directed to report the findings to the URRC no later than 18 months following formal approval of the Net Metering Program. If the findings indicate that changes to the T&Cs are warranted it is recommended that QEC file an application with the responsible Minister for approval of such changes.

iii. That QEC provide the estimated impact of the loss of load and any related loss of revenue due to net metering on other customers, together with QEC's proposals for addressing such loss of revenue at the GRA following the full implementation of the Net Metering Program.

iv. That QEC address, at the GRA following full implementation of the Net Metering Program, its strategic plan for successful and orderly introduction, integration and uptake of the Net Metering Program, as well as other potentially larger renewable energy programs (example IPPs) with a view to progressively reducing dependence on diesel fuel while enabling a foreseeable path towards affordability and reduction in carbon emissions, over the next five years.

v. That QEC file the final versions of the TIR and NSA with the URRC for acknowledgement taking note of the URRC's comments in Section 5 of this Report, prior to introduction of the Net Metering Program. These documents may be subject to review by the URRC in the context of the GRA following the full implementation of the Net Metering Program.

37. 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: September 20, 2017

Tony Rose, URRC Chair