Qulliq Energy Corporation

Application for Commercial and Institutional Power Producers Pricing Structure

May 2020

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1.0 Application

Qulliq Energy Corporation (QEC) hereby applies to the Minister Responsible for Qulliq Energy Corporation pursuant to section 12 of the Utility Rates Review Council Act, for an instruction respecting an acceptable pricing structure and rates that regulates QEC regarding the purchase of electricity from Commercial and Institutional Power Producers (CIPP).

2.0 Background

QEC's mandate is to provide safe and reliable electricity in an affordable fashion. QEC delivers electricity to approximately 15,000 customers across Nunavut through the operation of 25 standalone diesel power plants in 25 communities. Together these power plants have an installed capacity of approximately 76,900 kW.

Approximately 55 million litres of diesel is consumed annually to generate electricity for the territory. Diesel generation will continue to be the central means of generating electricity in a practical and reliable basis throughout Nunavut for the immediate future. However, QEC recognizes the need for a long-term approach that prioritizes and maximizes the benefits of moving to renewable energy and decreasing QEC's dependency on diesel fuel, all while still providing safe, reliable and affordable electricity.

To responsibly incorporate renewable energy sources into the generation mix, QEC must consider the financial implications of investing in renewable energy. The cost of introducing renewal energy into Nunavut's communities should not be passed on to QEC's customers, who already pay some of the highest electricity rates across Canada. Therefore, in an effort to facilitate the development of renewable energy opportunities within Nunavut, QEC is developing a CIPP program. By including CIPPs into the energy supply mix, QEC will be able to foster partnerships with Commercial and Institutional customers that engage in clean energy initiatives.

3.0 The Commercial and Institutional Power Producers Program

QEC is currently developing a CIPP Program. The program will allow existing commercial and institutional customers to generate electricity using renewable energy systems and in turn sell this electricity to QEC.

The CIPP program will not increase costs for customers, nor will it affect the reliability of service, as CIPP will still be connected to QEC's grid. Eligible CIPP will be able to sell power to QEC based on each community's energy requirements and capacity limits.
Integrating renewable energy systems into the territory's energy grid will help decrease Nunavut's dependency on diesel fuel, enabling QEC to reduce carbon emissions, and promote energy self-reliance.

The CIPP Program is anticipated to launch in 2020-2021 pending Cabinet approval.

4.0 Assessment of Pricing Structure Options

Based on QEC's review of IPP program pricing option practices in other Canadian jurisdictions QEC proposes consideration of the following pricing structure options:

Option 1:

QEC shall pay for the energy delivered by a CIPP at a rate per kWh. The rate will be based on the prior year territorial average avoided cost of fuel for QEC. The prior year annual data will be extracted in compliance with QEC's accounting fiscal year, from April 1 to March 31. The power purchase rate will be updated on an annual basis, with approval through the URRC's review and recommendation.

a. The initial rate for a CIPP entering into a Power Producer's Agreement (PPA) will be based on the annual data of the fiscal year preceding the date on which the PPA takes effect.

b. The initial rate will be considered the guaranteed minimum rate for the life of the PPA.

c. The power purchase rate will be re-calculated annually as follows:

   i. The power purchase price will be escalated for the current year at 50% of the annual increase of the avoided cost of diesel if diesel price increased relative to the past year.
   ii. The power purchase price will be de-escalated for the current year at 100% of the annual decrease of the avoided cost of diesel if diesel price decreased relative to the past year, but will not decrease below the initial rate set in the PPA.
   iii. Overall power purchase rate increases for the term of the agreement is capped at 20% of the initial rate offered in the PPA.

d. PPA term will be 25 years.

Based on the Prior year data, the current rate will be $0.2522 per kWh. (See Table A)

Table A

Prior year Data												
	Apr-18	**May-18**	**Jun-18**	**Jul-18**	**Aug-18**	**Sep-18**	**Oct-18**	**Nov-18**	**Dec-18**	**Jan-19**	**Feb-19**	**Mar-19**
Weighted Average Fuel Price ($/L)	0.921	0.925	0.931	0.941	0.941	0.941	0.941	0.957	0.965	0.967	0.968	0.972
Weighted Average GRA Fuel Efficiency (kWh/L)	3.71	3.76	3.76	3.76	3.76	3.77	3.76	3.76	3.76	3.76	3.76	3.76
Average fuel cost ($/kWh)	0.2484	0.2458	0.2474	0.2501	0.2503	0.2499	0.2504	0.2546	0.2567	0.2572	0.2574	0.2585
Annual Average Avoidance of Fuel Cost($/kWh)	**0.2522**											

Option 2:

QEC shall pay for the energy delivered by the CIPP at a rate per kWh. The rate will be based on a 3-year historical territorial average avoided cost of fuel for QEC. The prior year annual data will be extracted in compliance with QEC's accounting fiscal year, from April 1 to March 31. The power purchase rate will be updated on an annual basis, with approval through the URRC's review and recommendation.

a. The initial rate for a CIPP entering into a Power Producer's Agreement (PPA) will be based on the average annual data of the prior 3 fiscal years preceding the date on which the PPA takes effect.

b. The initial rate will be considered the guaranteed minimum rate for the life of the PPA.

c. The power purchase rate will be re-calculated annually based on the average of the prior 3 fiscal years preceding as follows:

   i. The power purchase price will be escalated for the current year at 50% of the annual increase of the avoided cost of diesel if diesel price increased relative to the past year.
   ii. The power purchase price will be de-escalated for the current year at 100% of the annual decrease of the 3-year average avoided cost of diesel if diesel price decreased relative to the past 3-year average, but will not decrease below the initial rate set in the PPA.
   iii. Overall power purchase rate increases for the term of the agreement is capped at 20% of the initial rate offered in the PPA.

d. PPA term will be 25 years.

Based on the Prior 3-year data, the current rate will be $0.2520 per kWh. (See Table B)

Table B

3 Year Historial Data

	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17
Weighted Average Fuel Price ($/L)	1.044	1.045	1.058	1.028	0.938	0.918	0.894	0.896	0.902	0.902	0.905	0.912
Weighted Average GRA Fuel Efficiency (kWh/L)	3.71	3.71	3.71	3.71	3.72	3.71	3.71	3.71	3.70	3.71	3.71	3.71
Average fuel cost ($/kWh)	0.2814	0.2815	0.2849	0.2768	0.2525	0.2474	0.2409	0.2412	0.2434	0.2429	0.2437	0.2457
	Apr-17	**May-17**	**Jun-17**	**Jul-17**	**Aug-17**	**Sep-17**	**Oct-17**	**Nov-17**	**Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**
Weighted Average Fuel Price ($/L)	0.907	0.911	0.916	0.903	0.909	0.906	0.909	0.925	0.925	0.925	0.928	0.929
Weighted Average GRA Fuel Efficiency (kWh/L)	3.71	3.71	3.71	3.71	3.71	3.71	3.71	3.71	3.71	3.71	3.71	3.71
Average fuel cost ($/kWh)	0.2444	0.2453	0.2466	0.2430	0.2449	0.2440	0.2450	0.2493	0.2491	0.2495	0.2503	0.2503
	Apr-18	**May-18**	**Jun-18**	**Jul-18**	**Aug-18**	**Sep-18**	**Oct-18**	**Nov-18**	**Dec-18**	**Jan-19**	**Feb-19**	**Mar-19**
Weighted Average Fuel Price ($/L)	0.921	0.925	0.931	0.941	0.941	0.941	0.941	0.957	0.965	0.967	0.968	0.972
Weighted Average GRA Fuel Efficiency (kWh/L)	3.71	3.76	3.76	3.76	3.76	3.77	3.76	3.76	3.76	3.76	3.76	3.76
Average fuel cost ($/kWh)	0.2484	0.2458	0.2474	0.2501	0.2503	0.2499	0.2504	0.2546	0.2567	0.2572	0.2574	0.2585
Annual Average Avoidance of Fuel Cost($/kWh)	**0.2520**											

Option 3:

In options 1 and 2, rates would be recalculated annually. If option 3 is selected, the initial power purchase rate will be calculated through either one of the above options but the approval of rates would be recalculated through the URRC's review and recommendation. This will mean that this rate will be calculated roughly every 4 years when QEC applies for a General Rate Application. How the rate is calculated, either with option 1 (based on the previous year's fuel prices) or option 2 (with an average of the previous 3 years), would remain the same but when the review occurs would be every 4 years instead of annually.

5.0 Impact of the Pricing Structures on Customers

The CIPP program under the listed pricing structure options will be cost-neutral to customers. The CIPP pricing structure will be based on an avoided cost of fuel required for generation by QEC. As such, the payment to a CIPP will be in line with the savings to customers from the avoided cost of fuel required for the amount of energy purchased from a CIPP.

6.0 Conclusions and Recommendations

QEC recommends the pricing structure Option 3 for the following reasons:

- This option offers some price certainty to CIPPs by establishing a minimum selling price, which will assist the CIPP proponents with the financial planning and analysis of their proposed facilities.
- QEC recommends option 2 for the initial rate. This pricing structure smooths out cost of fuel volatility in setting the initial rate by averaging the actual avoided cost of fuel over the 3-year period.
- The proposed option will not increase cost of energy charged to customers.
- Option 3 maintains a regulatory structure to the price setting consistent with the electricity rate adjustments approval process.

The current rate based of QEC's recommendations will be $0.2520 per kWh.