Schedule 6.1

Black & Veatch Report

2021 RATE APPLICATION

Rate Design

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PREPARED FOR

Liberty Utilities (Gas New Brunswick)

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BLACK & VEATCH

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Rate Design

Liberty Utilities (Gas New Brunswick) ("Liberty") continues to operate as a relatively new utility facing numerous unique challenges as compared to traditional gas Local Distribution Companies ("LDCs"). One of those challenges is found in addressing cost of service and rate design within the variety of constraints posed by the extent of Liberty's competitive markets, legislation and the regulatory compact. To understand the rate design proposals presented by Liberty in this application, it is necessary to begin with a discussion of the current constraints and how they interact to adversely limit the range of rate design options. This evidence consists of three sections: Section 1: Background on Rate Design, Section 2: Rate Design Tools and Section 3: Proposed Rate Design for 2021.

Section 1: Background on Rate Design

To understand the background on Liberty's rate design, this section begins with the utility industry concept of the regulatory compact, as has been discussed in Liberty's rate applications for the last several years. The regulatory compact can be summarized as a series of rights and obligations that represent the implied contractual relationship between the regulated utility and the regulatory authority.

Table 1 – Obligations and Rights Under the Regulatory Compact

OBLIGATIONS	RIGHTS
Obligation to serve.	Right to a reasonable return.
Provide safe and reliable service.	The provision of service is subject to reasonable rates, rules and regulations.
Charge non-discriminatory rates.	Receive protection from competition.
Charge just and reasonable rates	Right of eminent domain.

None of these obligations are unlimited in the sense that the terms of service and rules and regulations place limits on the extent of the utility's obligations through such activities as line extension policies or policies related to shutting off utility service to customers for non-payment. As the list in Table 1 illustrates, there are significant rights and obligations related to the issue of rate design. The obligations under the regulatory compact to provide non-discriminatory rates and to charge just and reasonable rates are imposed by the regulatory authority through the rate case process. Similarly, the rates approved by regulation must satisfy three rights. First, the rates approved must provide the utility with a reasonable opportunity to earn a return on its investment, i.e. the reasonable return standard. Second, the rates need to be reasonable including the ability to recover the utility's revenue requirement and to produce residual revenues after prudently incurred costs sufficient to reward shareholders for the risk of the investment and to allow the utility to attract capital on reasonable terms. Third, the rates must allow the utility to provide competitive services at competitive prices while still satisfying the two previous rights.

Where some customers have competitive options, the regulator is not relieved of the obligation to allow the utility an opportunity to earn the allowed return through rates that in total recover the cost of service including a reasonable return. Essentially, this means that the rate revenues from competitive customers plus the rate revenues from captive customers must equal the utility's total revenue requirement or the total cost of service.

The issue of reasonable rates for customers who have no economic option to taking service from the utility is neither new nor novel. The concept has been discussed in

economics literature and in regulatory decisions under several different descriptive terms such as "Constrained Market Prices" ("CMP") or "Constrained Differential Pricing." These concepts have been applied in many regulatory settings. For example, the U.S. Interstate Commerce Commission, the predecessor regulatory agency to the U.S. Surface Transportation Board, discussed the concept of CMP as a basis for establishing reasonable rates for captive shippers. In doing so they established three clear standards for assessing a reasonable level of rates: (1) revenue adequacy for the company; (2) management efficiency for the service provided; and (3) the Stand-Alone Cost ("SAC") test.[1] These three tests represent fundamental rights and obligations of the utility that must be preserved by the regulator. The rates proposed in this application satisfy these three principles. One, they are designed to produce the proposed revenue requirement presented by Liberty. Two, Liberty's management has been efficient in finding practical and cost-effective ways to moderate its total revenue requirement while maintaining a safe and reliable gas distribution system. Finally, Liberty's proposed rates meet the SAC Test since the gas distribution rates for any single class of customers (i.e., an individual rate class) do not exceed the SAC of providing utility service to that class. Where that test is not satisfied for an individual customer, Liberty has proposed a mechanism to allow them to reduce rates to the competitive level to retain customers because even within a class, customers may have different competitive constraints.

In providing additional benefits and savings to some rate classes as just explained above, other customers must make up for the shortfall in Liberty's total revenue requirement which serves to impose additional risks on other classes of service. In this case, Liberty's larger Mid General Service customers have also reached the competitive price ceiling.

Significantly, since Liberty's current rates are primarily volumetrically based, the utility has a greatly diminished opportunity to earn its allowed rate of return. This occurs because rates are designed on normal weather and the utility's forecast of test year volumes may or may not be achieved in the initial year new rates are implemented. As actual weather varies from normal weather, Liberty's return is either higher than allowed when weather is colder than normal or lower than allowed when weather is warmer than normal. The result of attempting to recover a significant level of fixed costs through a utility's volumetric rates is a reduced level of revenue stability that makes capital attraction difficult.

This ratemaking challenge is made more pronounced by the ability of customers to switch from gas to an alternate fuel on a short-term basis to avoid periods of high commodity charges associated with market-based gas commodity charges and the fluctuating prices of competitive fuels. We continue to see very low propane prices and

[1] SAC refers to the cost of a service if the service were provided alone, exclusive of other services. When two or more services share costs jointly or in common, the removal of all services but one from the mix would still entail the service incurring these joint or common costs. The SAC is the sum of directly attributable costs of a service, and the joint or common costs the service shares with others.

increased supplies in Atlantic Canada where natural gas prices are relatively high creating a good market and financial margin for propane. This has resulted in hundreds of customers in New Brunswick and Nova Scotia switching from utility regulated natural gas to propane which is lightly regulated.

Historically, Liberty had available a revenue deficiency deferral account that made it financially indifferent to weather, forecast error and competitive forces in the energy marketplace. Changes in regulation have eliminated this type of ratemaking mechanism that is widely used in other jurisdictions so that Liberty is now adversely impacted by both the competitive realities in the New Brunswick market and the significant volumetric based recovery of fixed costs. However, legislation now allows for the establishment of variance accounts subject to the approval of the New Brunswick Energy and Utilities Board ("Board"). Ultimately, Liberty is faced with the challenge of constrained optimization for recovery of its revenue requirement such that significant changes must occur in the definitions of rate classes and the design of rates in the future.

The competitive market issues arise in other classes of service as the propane alternative has become economic for some customers. The issues differ from class to class and the economics of alternative fuels are very different. For example, oil and propane require onsite storage and payment on delivery whereas gas and electricity utility services are delivered as needed and payment is in arrears. In particular, the cost of propane has become a viable competitive option for Liberty's MGS and LGS rate classes necessitating that they also must be managed within that additional constraint.

Section 2: Rate Design Tools

In this section, the specific rate design tools available to Liberty are discussed. Essentially, Liberty uses a combination of customer, demand and volumetric charges to recover its total revenue requirement approved by the Board. For Liberty's smaller customers, only customer and volumetric charges are practical based on its current metering technology. Further, there is a limit to the level of the customer charge in rate design before it drives away customers who use small amounts of gas in a month. In other words, raising the customer charge to promote revenue stability and a closer tracking of costs would result in exceeding the competitive price ceiling for a group of low use customers. The reason is quite simple in that spreading a high monthly customer charge over very few GJs of annual gas use results in charges that exceed the cost of the customer's energy alternative(s).

The competitive effect on the smallest customers in a rate class precludes Liberty from continuing to propose large increases in the monthly customer charge to benefit revenue recovery even though doing so would reduce the intraclass subsidies associated with volumetric rates. If future increases in the monthly customer charge are insufficient to enable recovery of Liberty's customer-related costs, then the only available option for Liberty is to increase its volumetric charges thereby decreasing its revenue stability over time. Where demand charges are available, the utility cannot increase demand charges at will because doing so creates potential adverse impacts on low load factor customers in the class. It is necessary to review each of these important issues for each rate design proposal that Liberty brings forward to the Board. Liberty has worked diligently to design new rates that manage these constraints and, at the same time, to increase fixed cost recovery through fixed charges.

There are numerous other rate design and ratemaking tools in use in Canada and the U.S. that have been approved by regulators to provide a better opportunity for regulated utilities to earn their allowed rate of return on investment. These tools rely on deferral or variance accounts that adjust rates on a periodic basis for changes in specific costs. These tools are necessary to address a variety of costs or revenues that are wholly or partially beyond the control of utility management. There is a long-established regulatory practice of allowing flow-through treatment of the unpredictable and uncontrollable costs of a utility so that customers are charged through rates only the actual costs of service and there are no windfall gains or losses to the utility.

For Liberty to remain a viable utility in the face of the conflicting constraints described earlier, its "rate design tool kit" must include more creative and effective ratemaking options that can help provide a sound financial footing for Liberty in the future. Liberty requires greater rate flexibility that can only come from the Board encouraging the

adoption of innovative ratemaking options[2] to address both the utility's total revenue requirement and the rate flexibility needed to operate in the unique competitive energy environment in the Province.

More specifically, Liberty Utilities is requesting Board approval of a separate variance account for each of the following expense items: (1) the amount of deemed income taxes expected to occur in 2021 and in subsequent years; (2) the difference in the amount of pension cash contributions budgeted for 2020 and the actual cash contributions for 2020; and (3) COVID-19 expenses for incremental costs including bad debt, additional safety supplies and lost revenues from actions taken to provide relief to customers including uncharged late payment fees. The general objective that Liberty Utilities is seeking to achieve with this request is the stabilization of its distribution rates over time to ensure the impact of these additional expenses do not result in immediate and significant changes to customers' rates. A further explanation of these expense items and the reasons why Liberty Utilities believes this type of regulatory treatment is necessary and appropriate is provided in Section 3.10 of this Application.

This treatment of a one-time increase in a utility's expenses is a ratemaking approach widely accepted by utility regulators to enable the smoothing out of unusually large, one-time expenses over a multi-year period. An example of these types of expenses are the rate case expenses of a utility which can be significant for some utilities, but often not incurred on a regular basis. These expenses are allowed to be deferred and amortized over a subsequent multi-year period to ensure the impact to the utility's customers is sufficiently moderated to avoid an abrupt increase in rates. In the U.S., utilities operating in states such as Maryland and Minnesota have received regulatory approval to implement this type of ratemaking treatment of rate case expenses.[3]

Regarding the regulatory treatment of utility pension costs, in 2017 the Ontario Energy Board ("OEB") issued a report on regulatory treatment of pension and other post-retirement benefits and how utilities in the province will be permitted to recover such costs through rates.[4] The OEB mandated the creation of a new "variance tracking account" to record benefits received by the utilities to be funded by ratepayers in order to facilitate the repayment of these benefits. For example, Enbridge Gas Distribution has

[2] See Section 6.0 of Enbridge Gas New Brunswick's December 21, 2018 Application (Black & Veatch's evidence) in Matter No. 398 which provides a wide range of such ratemaking mechanisms approved by regulators in Canada and the U.S. and the types of costs they address.
[3] For example, the Maryland Public Service Commission approved the deferred treatment and amortization over a three-year period of the rate case expenses of Baltimore Gas and Electric Company in Case No. 9498 (Order No. 88975 issued on January 4, 2019); and the Minnesota Public Utilities Commission approved similar ratemaking treatment for the rate case expenses of Northern States Power Company (Xcel Energy) in Docket No. E002/GR-15-826 (Order issued on June 12, 2017).
[4] Ontario Energy Board, Report on the Regulatory Treatment of Pension and Other Post-employment Benefits (OPEBs), May 18, 2017.

a Post-Retirement True-Up Variance Account ("PTUVA") for the purpose of recording the differences between the utility's forecast pension and post-employment benefit expenses and its actual pension and post-employment benefit expenses. In addition, gas utilities operating in the U.S. in states such as Massachusetts have received regulatory approval to implement pension and other post-employment benefits costs through the use of a tracking mechanism.[5]

Finally, in recent times several gas and electric utilities in Canada and the U.S. have received regulatory approval to create a regulatory asset to track COVID-19 related expenses for recovery through customers' rates in subsequent periods.[6]

[5] For example, NSTAR Gas (part of Eversource Energy) is permitted to fully recover its allocated share of qualified pension expenses through a regulatory-approved reconciling rate mechanism tariff ("pension adjustment mechanism" or "PAM") that is collected from customers in rates. The PAM removes the volatility in earnings that could result from fluctuations in financial market conditions and Plan experience. PAM-related costs are a part of NSTAR Gas' local distribution adjustment clause that is reset through an annual filing with the utility regulatory commission.

[6] This type of regulatory treatment of COVID-19 expenses has already been approved by utility regulatory commissions in Ontario and in the states of Arkansas, California, Connecticut, Delaware, Georgia, Iowa, Maryland, Minnesota, Nevada, Oklahoma, Pennsylvania, Virginia, Wisconsin and Wyoming.

Section 3: Proposed Rate Design for 2021

The rate design process begins with the allocation of the utility's total revenue requirement among the various classes of service (i.e., its rate classes).[7] Since some rate classes are above the Revenue-to-Cost Ratio derived in Liberty's cost of service study and others are below, the first step in the rate design process is to determine the market constraint on rates as it relates to Liberty's cost of service-based revenue requirement. Table 2 below compares the cost of service revenue requirement to the budgeted distribution revenue after rate design.

Table 2 - Comparison of Distribution Rate Revenue to Cost of Service (COS) Revenue Requirement (RR) by Class of Service

	SGS	MGS	LGS	CGS	ICGS	OPS
Distribution Rates Revenue	$8,217,676	$14,197,117	$12,094,822	$5,900,445	$5,804,433	$76,171
COS Base Revenue Requirement (RR)	$14,997,970	$15,820,974	$7,089,214	$4,122,938	$4,088,549	$37,525
Revenue-to-Cost Ratio	55%	90%	171%	143%	142%	203%

The revenue changes in Table 3 below produce the target increase or decrease for the class revenue requirement found in the total revenue line for each rate class. This lower revenue requirement is indicative of management's commitment to efficient operations, prudent cost savings in addition to the 2019 revenue sharing results.

Table 3 – Revenue Change and Percent Change by Rate Class

	SGS	MGS	LGS	CGS	ICGS	OPS
Revenue Change	$0	($447,349)	($399,540)	($154,754)	($191,479)	($5,370)
Percent Change	0.00%	-3.15%	-3.30%	-2.62%	-3.30%	-7.05%
Total Revenue	$8,217,676	$13,749,767	$11,695,283	$5,745,691	$5,612,954	$70,801

These decreases are also reflective of the fact that Liberty's 2019 earnings have exceeded 12.9%, and Section 52.03(2)(b)(ii)(B) of the Gas Distribution Act, 1999 ("GDA") requires Liberty to share half of that excess with customers in the amount of $1.065 million. This is explained in detail in the letter that Liberty sent to the Board dated April 30, 2020.[8]

[7] The class allocation process is facilitated using a Cost of Service ("COS") computer model developed by Black & Veatch which is made available for Liberty Utilities' use. For this Application, Liberty Utilities has utilized an enhanced version of the COS Model that has been developed by Black & Veatch. These enhancements do not change the capabilities or functionality of the COS Model, but simply add features which help facilitate the operation of the Model and the presentation of results.

[8] Liberty Utilities (Gas New Brunswick)'s ("Liberty Utilities") Regulatory Financial Results for 2019.

The concept of graduated customer charges has been approved in the past by the Board and Liberty has recommended the continued use of graduated customer charges where costs differ based on the size of the customer. In particular, meter costs generally increase as the size of the customer increases. Graduated customer charges track those increases in cost. In addition, where customer charges recover less than the full customer-related costs, the level of the initial rate block charge should be higher than that of the second block, as is the case once again under Liberty's proposal.

PROPOSED CHANGES TO RATES

Liberty's definition of all rate classes remains the same and they continue to use the same rate design components approved by the Board in prior rate cases. Given the decrease to rates is primarily driven by the $1.065 million rate credit due to overearnings in 2019 (compared to the $133,492 decrease in the revenue requirement); the rate design strategy was to adjust the first block rate downward, or where there is a winter and summer rate, to reflect the decrease in the winter rate. This rationale was to ensure all customers received a bill decrease in their first block and to provide for this decrease in the winter when gas bills are higher.

SGS Rate Class

Liberty's rate design proposal is to make no changes to the current SGS rates. This is supportive of the conclusion that a further increase in the monthly customer charge for this rate class is not practical because of the bill impacts on low use customers within the class as the monthly customer charge would likely begin to force smaller customers to eventually leave Liberty's gas system.

MGS and LGS Rate Classes

With respect to the MGS rate class, Liberty's proposal is to maintain the same monthly customer charge as under current rates and to decrease the volumetric delivery charge in Block 1. With respect to the LGS class, Liberty's proposal is to maintain the same monthly customer charge as under current rates and to decrease the volumetric delivery charge in Block 1. This approach provides the overearnings credit to all customers in proportion to their gas usage in the first block.

CGS, ICGS, and OPS Rate Classes

Liberty's proposal is to decrease the winter rates for the CGS and ICGS rate classes to provide the overearnings credit during winter months when gas usage is higher. For the CGS and ICGS rate classes, there is a proposed reduction to the Winter Charges. The Block 1 rate for the OPS rate class also is proposed to decrease.

Liberty believes that this consistent approach reasonably addresses the overearning credit and produces rates that are just and reasonable.

Rate Design Elements and Monthly Charges

Rate Class	Min (Monthly Demand Peak)	Max (Monthly Demand Peak)	Customer Charge ($/month)	Demand Charge ($/GJ)
Small General Service	-	-	20.00	n/a
Mid-General Service (who do not qualify for SGS)	-	<250 GJ	For customers with max. consumption up to 60 GJs/ month: 20.00 For customers with max. consumption greater than 60 GJs/month: 50.00	n/a
Large General Service	250 GJ	n/a	For customers with max. consumption up to 650 GJs/ month: 275.00 For customers with max. consumption greater than 650 GJs/month: 375.00	n/a
Contract General Service	1,000 GJ	<10,000 GJ	n/a	19.00
Industrial Contract General Service	10,000 GJ	-	3,300.00	25.56
Off-Peak	n/a	n/a	50.00	n/a

A copy of the rate schedules is provided in Schedule 6.2 – Rate Schedules 2021.