UTILITIES CONSUMERS' GROUP
Box 9300
29 Wann Rd.
Whitehorse, Yukon Y1A 4A2
Ph./Fax: 633-5210

September 2, 2008

Yukon Utilities Board
Box 31728
Whitehorse, Yukon
Y1A 6L3

Attention. Deana Lemke, Board Secretary

Re: YECL 2008-09General Rate Application

Dear Deana:

As per Board Order 2008-07, the UCG would like to file the following evidence on rate of return and capital structure.

Should you have any questions, please do not hesitate to contact me.

Yours truly,

Roger Rondeau

Rate of Return – Captial Structure

Roger A. Morin, PhD, Distinguished Professor of Finance
Professor of Finance for Regulated Industry
Center for the Study of Regulated Industry
College of Business, Georgia State University
Chairman & C.E.O. Utility Research International

Cost of Equity Measurement
4 Principal Methodologies

1. Comparable Earnings
2. Risk Premium
3. Capital Asset Pricing Model ("CAPM")
4. Discounted Cash Flow ("DCF")

1. Comparable Earnings Test

- Measures the ROE of equal risk non-regulated companies
- Intended to provide a measure of past earning of comparable companies to use as a proxy for future utility returns

Table 1: Canada-US Average Allowed Return Differential, 1992-2007

	Canada	US	Difference
1992	12.88	11.98	0.89
1993	12.58	11.37	1.21
1994	11.44	11.24	0 19
1995	12.03	11.44	0.59
1996	11.68	11 12	0.56
1997	11.01	11.31	-0.29
1998	10.38	11.52	-1 15
1999	9.52	10.64	-1.12
2000	9.80	11.35	-1.55
2001	9.64	10.96	-1.32
2002	9.61	11 10	-1.48
2003	9 79	10.97	-1 18
2004	9 55	10.63	-1 08
2005	9.52	10.41	-0.89
2006	8.99	10.43	-1.45
2007	8.71	10 35	-1.64

By the simple metric of average ROEs in Canada and the US, a clear disparity has emerged. This disparity was the subject of a recent report by Concentric Energy Advisors, which examined the disparity between Ontario LDC's and US LDC's in particular. The Concentric Report concludes that Canadian ROEs were more sensitive to the drop in bond yields over this period than were US ROEs. Further, the Concentric Report suggests that this sensitivity arose through the adoption of an automatic adjustment mechanism that explicitly ties Canadian ROEs to long-bond prices.[5]

B. Is Allowed ROE the Proper Metrics for the Comparison of the Treatment of Utilities by their Regulators?

A threshold question is whether the figures in Table 1 mean anything in terms of assessing regulatory treatment in Canada versus the US. That is, given the unique economic and financial contexts of each country, are ROEs structurally different such that an allowed return in the Canada does not mean the same thing as an allowed return in the US?

Three issues arise in answering this question. First, is the ROE the proper metric, as opposed to the return that the utilities in question have actually achieved during the period of time the rates were in effect? It is a question that arises often in comparison of ROEs. Second, does capital flow freely between countries? If capital does not flow between countries, allowed returns are

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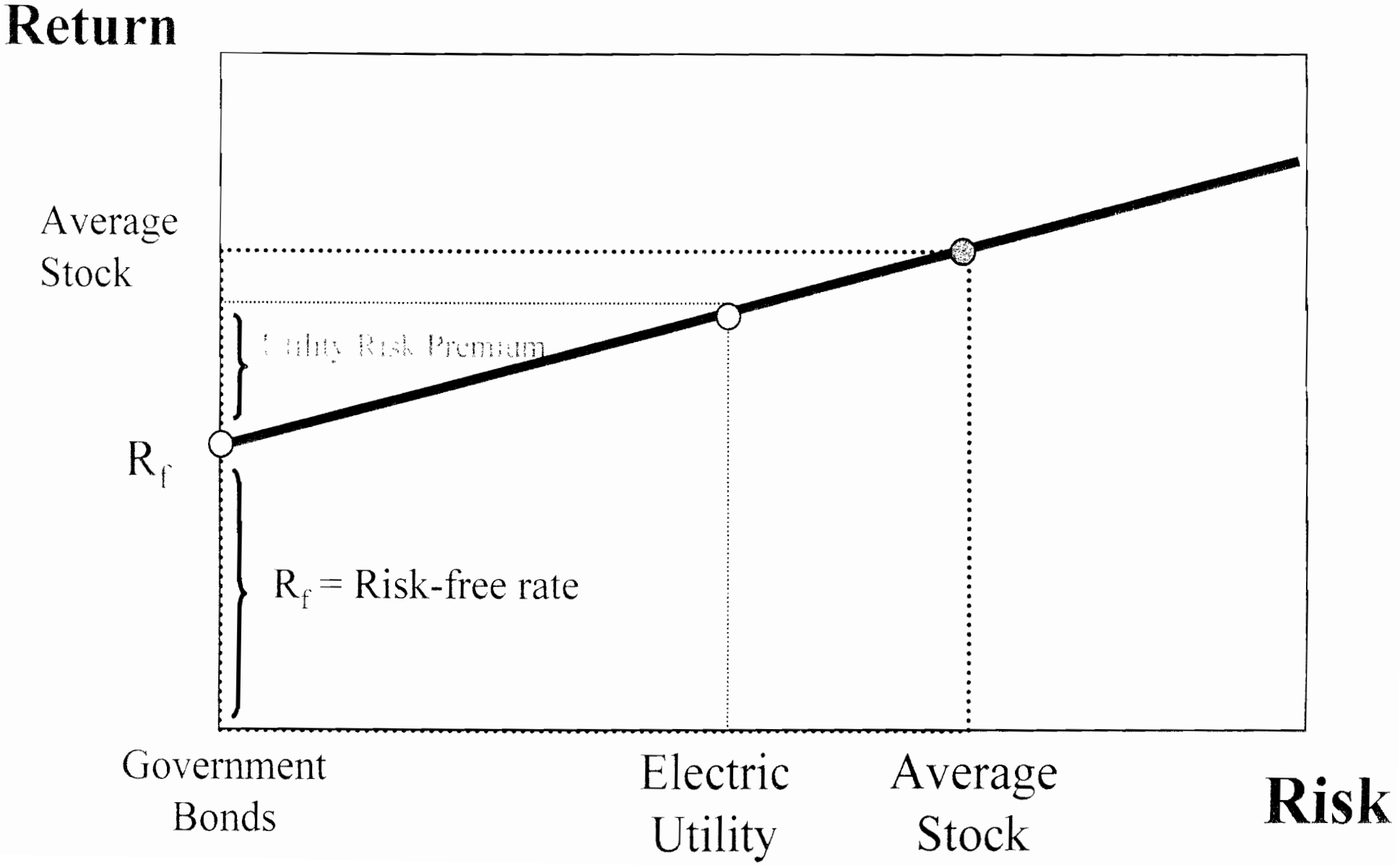
[5] Concentric Energy Advisors, "A Comparative Analysis of Return on Equity of Natural Gas Utilities," prepared for Ontario Energy Board (2007), p. 2.

[5] *Id.*, p. 56.

2. Risk Premium Method

- Estimates the necessary premium over risk free rate to attract investors:
- Equity return = Risk-Free + Risk Premium

Utility Risk Premium



3. CAPM Method

Return = Risk free rate + Risk premium

Return = Risk free rate + Beta (Market Price of Risk)

$$= R_f + \beta(R_m - R_f)$$

TABLE 1 AVERAGE INFRASTRUCTURE FIRM BETAS BY COUNTRY, SECTOR, AND TYPE OF REGULATION, 1990–94

	Electricity		Gas		Combined gas and electricity		Water		Telecoms	
Country	Regulation	Beta	Regulation	Beta	Regulation	Beta	Regulation	Beta	Regulation	Beta
Canada	—	—	—	—	ROR	0.25	—	—	ROR	0.31
Japan	ROR	0.43	—	—	—	—	—		ROR	0.62
Sweden	—	—	—	—	—		—		Price cap	0.50
United Kingdom	—	—	Price cap	0.84	—	—	Price cap	0.67	Price cap	0.87
United States	ROR	0.30	ROR	0.20	ROR	0.25	ROR	0.29	Price cap (AT&T)	0.72
									ROR (others)	0.52

— Not available or not applicable.

Note: The betas are asset betas that control for differences in debt-equity ratios between firms. ROR is rate-of-return regulation.

Source: Oxford Economic Research Associates, "Regulatory Structure and Risk: An International Comparison" (London, 1996)

the regulator naturally takes into account the regulated utility's rate of return. If it is high, the price cap is likely to be reduced; if it is low, the price cap may be relaxed.

But as long as price cap reviews are sufficiently infrequent (say, every five years), price cap and rate-of-return regulation should have different effects on regulated firms. In particular, a price cap subjects businesses to more risk. For example, under price cap regulation, if a firm's costs rise, its profits will fall because it cannot raise its prices to compensate for the cost increases—at least until the next price review, which may be several years away. Under rate-of-return regulation, however, the business would seek—and typically be granted within a year or so—a compensating price rise, so its profits would not change much. But if the firm's costs fall, price cap regulation is more advantageous to the firm than rate-of-return regulation, because it would retain more of the resulting benefits as profits. Thus, under rate-of-return regulation, consumers bear some of the risk that firms bear in price cap systems. This difference in impact means that firms subject to price cap regulation have a stronger incentive to lower their costs because they keep more of the cost savings than they would if they were subject to rate-of-return regulation. But the increased risk they bear tends to raise their cost of capital.

Empirical evidence on risk and the regulatory system

The risk that affects a firm's capital cost can be measured by a statistic called the firm's beta. Betas are used by investors worldwide and are an important factor in their decisionmaking. A firm's beta measures the extent to which the firm's returns vary relative to those of a diversified portfolio of equity holdings. It indicates whether an investor with a diversified portfolio would take on more risk by investing in a particular firm. The higher the beta, the bigger the increase in the riskiness of the investor's portfolio.

Several studies that compared the betas of British firms subject to price cap regulation with those of U.S. firms subject to rate-of-return regulation found that the U.S. firms have lower betas, as expected. But the results leave room for doubt because it is unclear whether it is the difference in regulation that's at work or something else, such as a difference in the degree of competition in the British and U.S. markets. But new empirical work done by Oxford Economic Research Associates for the World Bank tends to confirm the earlier conclusions. This study measured the betas of more than 100 infrastructure firms in many countries. Table 1 summarizes the results of the study, by country, for companies subject to price cap or rate-of-return regulation. (Some countries in the study have

4. DCF Method

Return = Dividend Yield + Growth

$$K = D_1/P + g$$

Dr. Kalymon's Proposals

8.5% - 9.0%

40% Common Equity Ratio