CLOSING SUBMISSION OF

DR. ROLAND R. CLARKE

BARBADOS **NO. 02/09 BL&P - RADJ**

THE FAIR TRADING COMMISSION

IN THE MATTER of the Utilities Regulation Act, Cap 282 of the Laws of Barbados;

IN THE MATTER of the Utilities Regulation (Procedural) Rules, 2003;

AND IN THE MATTER of the Application by the Barbados Light & Power Company Limited (the Applicant) for a Review of Electricity Rates pursuant to Section 16 of the Utilities Regulation Act, Cap. 282

APPLICANT

The Barbados Light & Power Company Limited

INTERVENORS

Barbados Association of Retired Persons

Barbados Small Business Association

Barbados Association of Non-Governmental Organizations (BANGO)

Barbados Consumer Research Organisation, Inc. (BARCO)

Dr. Roland R. Clarke

Mr. Errol Niles

Mr. Douglas Trotman

Canbar Technical Services Ltd.

Sentinel Group Caribbean, Inc.

THE PURPOSE OF THIS CLOSING SUBMISSION

1. The purpose of this Closing Submission is principally to recommend that:
    a. The established principles and standards of regulation should be strictly followed by the Fair Trading Commission and the Applicant in establishing the weighted costs of capital of the Applicant. This requires the use of local data on he expected return to equity as revealed by the historic risk adjusted market returns Barbados Stock Exchange;
    b. The assertion by the Applicant that customer energy efficiency will be effected by the introduction of an inclining block structure to its rates, should be rejected by the Commission;
    c. The Applicant should be ordered to implement the recommendations of its 20002 study entitled "Demand Side Management Study for The Barbados Light and Power Company and the Government of Barbados" as a means to effect energy efficiency among customers. This should be done under the regulatory supervision of the Commission, and it should include financial incentives to customers to encourage energy efficiency.

PRINCIPLES OF REGULATION

2. The Applicant, its legal counsel as well as its expert witness, Mr. Robert Camfield, assert that the principles of public utility regulation in the United States should be followed in

Barbados. However, they appear to confuse the issue of adopting the "principles" of regulations with that of adopting "data" from the United States.

3. According to Applicant's lead legal counsel, Sir Henry Ford, as well as Mr. Camfield, the accepted principles have been codified in two decisions by US courts, namely: (a) Bluefield Water Works Improvement Company against Public Service Commission of Western Virginia, and the Federal Power Commission and the Hope Natural Gas Company.
4. In respect to the Bluefield decision, the Applicant and its advisors fail to take account that this decision is predicated on, as Mr Camfield asserts in his Affidavit, "… a public utility is entitled to such rates as will permit it to earn a return … equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties …" The use of local data on the market rate of returns are therefore not excluded by the Bluefield decision.
5. Mr. Camfield also asserts that "For several reasons, the study cannot readily draw upon, at a technical level, the capital market experience of utilities and companies in the Caribbean for the purposes of capital evaluation… the common stock trading experiences of these exchanges is unusually thin, which would impose special analytical procedures to the study." See paragraph No. 105 in Mr. Camfield's Affidavit. I therefore assert that Mr. Camfield did not categorically state that local data should not or cannot be be used. Indeed, it is rather perplexing as to why Mr. Camfield did not simply employ the "special analytical procedures" that he alluded to.
6. I therefore contend that the above presents a clear case for the use of either:
    a. The average returns on the Barbados Stock Exchange, and not the average returns on businesses in the United States and Canada as proposed by Mr. Camfield. According to the evidence presented by Mr. Camfield, the Barbados Stock Exchange's cumulative realized historical return between 1990 to 2006 is 5.82%, with a statistical variation of 20.57%. See Table "T" in Mr. Camfield's Affidavit. This is significantly lower than the 13.5% derived for the United States

by Mr. Camfield, and subsequently used in the computation of the Applicant's cost of capital. See Table B and paragraph 20 in Mr. Camfield's Affidavit; or

b. That the weighted average returns faced by the Applicant's equity investors should be used. Although the Applicant has only one investor, the Barbados Light and Power Holdings which in turn is traded on the Barbados Stock Exchange, this parent company has investors who originate from a variety of countries and regions within any one of those countries. Most of these investors are from Barbados. Therefore if Barbadian investors account for say 70% of the investors, then a weight of 0.7 should be given to the returns of Barbados Stock Exchange. Likewise, if the remaining 30% of the investors originate in say the USA, then a weight of 0.3 should be given to 13.5% return computed by Mr. Camfield for the relevant class of US equities. This approach would ensure that the Applicant complies with the "principles" of regulation in the USA, while appropriately weighting the Barbadian investors and the existing "data" concerning the market returns on the Barbados Stock Exchange.

7. I therefore assert that the "principles" adopted by the Fair Trading Commission, does not require that only US or Canadian "data" be used to compute returns on equity for the purposes of calculating the return on equity for the investors in the parent of the Applicant.
8. I also assert that the principles of regulation require that equity returns on actual "investments" made by the Applicant's investors be analysed, rather than the potential "investment opportunities" in other countries faced by the investors. While Barbadian and other investors may invest in US equities, the reality is that for decades the local investors have invested in the Applicant and thereafter the parent of the Applicant, and have experienced a much lower rate of return than that suggested by Mr. Camfield. Further, this compartively low rate of return has not hindered the Applicant or its parent in raising capital from international sources in the past, nor has it adversely affected the financial integrity of the Applicant or its parent.

9. I also assert that the weighted "cost" of capital "to the Applicant" should not include any "cost rate" for:
    a. Deferred Income Tax Credit; and
    b. Deferred Manufacturer's Allowance

    These two line items are given in Table "T" in Mr. Camfield's Affidavit, and are merely Government incentives which do not result in any "costs" to the Applicant. Hence they do not, and are not intended to increase the overall costs of capital "to the Applicant." On the contrary, they serve to reduce the Applicant's "cost" of capital by merely diluting the percent contribution of the other line items in the overall cost of capital as depicted in Table "T".

The APPLICANT'S WEIGHTED COST OF CAPITAL RECALCULATED

10. Given the above, I propose that Table "S" in Mr. Camfield's Affidavit should be recalculated as shown below. Here the "cost rate" of equity is set equal to the risk adjusted market returns of the Barbados Stock Exchange. This comprises of the sum of the historic annual market returns of the Barbados Stock Exchange of 5.82% on average, plus the sovereign risk premium for Barbados of 1.43% on average. This data is taken from Table "Q" and paragraph No. 149 respectively in Mr. Camfield's Affidavit. I also submit that the "cost rate" of the Deferred Tax Credits and the Deferred Manufacturer's Allowance should be assigned to be zero. As a result, Table "S" and Table "T" are re-calculated as follows:

Table S - Recalculated by Clarke

	Observed Balances		Cost Rates	Weghted Cost
Long Term Debt	$ 188,374	35.00%	5.25%	1.84%
Short Term Debt	$ -	0.00%	0.00%	0.00%
Common Equity	$ 349,837	65.00%	7.18%	4.67%
Total	$ 538,211	100.00%		6.50%

Table T - Recalulated by Clarke

	Balances ($000)	Capilization Shares	Cost Rate	Weighted Cost Rate
Long term debt	188,374	31.32%	5.25%	1.64%
Short term debt	-	0.00%	0.00%	0.00%
Common Equity	349,837	58.17%	7.18%	4.18%
Customer Deposits	20,010	3.33%	6.46%	0.21%
Deferred Investment Tax Credits	30,099	5.01%	0.00%	0.00%
Deferred Manufacturers Allowance	13,052	2.17%	0.00%	0.00%
Total	601,372	100.00%		6.04%

ENERGY EFFICIENCY, ENERGY CONSERVATION AND INCLINING BLOCK RATES

11. The Applicant states that one of its main objectives in rate design is to "encourage customers to use electricity more efficiency" by *inter alia* "providing rates with an inclining block rate structure in Domestic Service, General Service and Employee Tariffs." See paragraph 13(c) in Mr. Stephen Worme's Affidavit. In contrast, the Applicant also asserts in its written evidence that "Consideration was given to utilizing models that incorporate the fuel costs, using the fuel adjustment as an explanatory variable. However, the fuel price variable proved insignificant in all of the models and thus was incorporated into the forecast model specification." See Responses to FTC Interrogatories Series No. 1, Question 26. I assert that this implies that the fuel price elasticity of demand for electricity is zero in Barbados. Hence, the introduction of an

inclining block rate would have the sole purpose of raising revenue for the Applicant, rather than encouraging customers to use energy more efficiency.

12. I also assert that an inclining bock rate would serve to discourage electricity consumption over and above certain pre-set levels as given in the tariffs. Hence inclining block tariff are designed to discourage the waste of electricity and I therefore support the Applicant to introduce such tariffs.
13. However, the reduction of waste is part of the wider concept of "energy conservation" and is not to be confused with "energy efficiency." Energy efficiency is the use of less electricity (input) to attain the same level of output. Energy efficiency can only be achieved by encouraging customers to install energy efficient equipment. I assert that a well known approach to customer based energy efficiency activity is captured in the principles of "Demand Side Management" as practiced in the USA.

DEMAND SIDE MANAGEMENT (DSM)

14. The Applicant submitted evidence concerning its efforts to design a Demand Side Management Programme. The study is entitled "Demand Side Management Study for The Barbados Light and Power Company and the Government of Barbados" and was prepared in December 2000 by consultants to the Applicant. See Responses to FTC Interrogatories Series No. 1, Question 30, Exhibit 30A. "The study determined that the technical and economic potential for energy conservation in all sectors was in the range of 30% at the customer level. A series of program concepts indicated an achievable potential of about 6% for energy and 10% for capacity." The study defines "technical potential is that reduction in energy consumption that would occur if all electrical equipment were replaced with the most efficient equipment, while economic potential is based on the replacement of all equipment for which there is a positive payback." The study also states that "When analysed using the 'California Standard Test', it was determined that programs would have a benefit costs cost ratio of about 1.7:1 from the perspective of country, 4.2:1 from the perspective of the Barbados Light and Power, and

about 2.5:1 from the perspective of participating customers." See the Executive Summary of the study, on page 2 of 51. This implies that the Applicant stands to benefit the most from the implementation of DSM.

15. The study also states that "Over the 10 year planning horizon, this DSM portfolio will generate energy savings of about 6% and capacity savings of 10%. These numbers compare with an economic potential of 23% for energy and 25% for capacity." See Section 5 – Energy and Capacity Impacts, on page 27 of 51.
16. The study did not appear to give exact investment requirements for DSM, but states that "While DSM is more economic than traditional sources of new supply, investments of the same order of magnitude as a new power plant will be required. Part of this investment will come from the participating customers, but part may come from the utility sector or government or from newer approaches such as Energy Services Companies that may channel private investment into efficiency projects."
17. On the issue of customer financial incentives, the study states that "Despite the promising paybacks revealed by the DSM economic analysis, there is a need to 'seed' the market with financial incentives. Several of the proposed programs contain incentive components designed to make the DSM investment more affordable to the customers. Implicit in the program design is an assumption that adequate program funding is available (often based on cost recovery mechanisms through rates) and that the provision of financial incentives to customer is acceptable in Barbados … It is expected over time, the incentives will stimulate the availability of DSM products to the degree that the subsidies can be phased out and replaced by standards and other non-incentive support activities."
18. The Applicant proposes to undertake a number of energy efficiency and energy conservation initiatives. See Responses to FTC Interrogatories Series No. 1, Question 13. I assert that this is simply a mere list of activities, and does not rise to the level of a well orchestrated DSM programme, which would include customer incentives and regulatory oversight.

19. I also assert that if the Applicant had pursued the DSM program in the year 2000, that it would be saving 10% of the currently peak load, or about 15 MW. Such a high level of capacity reduction would have most likely have caused the Applicant to postpone the installation of its last plant, and the current rate base would have been less. Further, as some of the costs of DSM would have been bourned by the customer, the Applicant's rate base would have been further minimised. That suggests that the need for a rate increase at this time may have been obviated. This is indicative of a serious missed opportunity by the Applicant.
20. Further, the Applicant does not have any incentive to miminise its rate base, given the current regulatory philosophy as practiced in Barbados. As it turns out, the larger the rate base, the greater the absolute levels of financial returns to the Applicant. This perverse incentive needs to stop as it is not good for Barbados. It only serves to encourage the Applicant to consume an inordinately larger portion of the national economic pie than is necessary, all with the approval of the Regulator. One way to stop this perverse incentive is to require the Applicant to implement a DSM programme, and to re-do its supply planning (i.e. generation expansion planning) bearing full cognizance of the demand side. This approach to planning is called "Integrated Resource Planning" and its principles and practices are well established in the USA. Indeed, this Intervenor is an expert in the area of integrated resource planning.

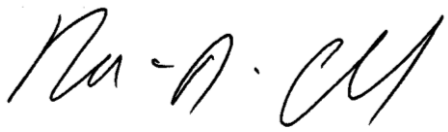
ORDERS BEING SOUGHT

21. In the circumstances, this Intervenor, Dr. Roland R. Clarke seeks the following Orders:
    a. That the Rate of Return on Rate Base of 10.48% as proposed by the Applicant be not approved.
    b. That the revenue requirement of $502,238,415 as proposed by the Applicant be not approved.
    c. That the Proposed Tariff details of which are described at Schedules K-1 to K-8 as proposed by the Applicant be not approved.

d. That data from the Barbados Stock Exchange be used by the Applicant to compute the expected return on equity by local investors, and thereby compute the Applicant's expected costs of capital on a regulatory basis.
e. That a demand side management programme (DSM) be implemented by the Applicant under the regulatory supervision of the Fair Trading Commission, and with financial incentives to customers to encourage energy efficiency.
f. That the Applicant conduct an integrated resource planning exercise to include the relative impacts of demand side management on an equal basis with supply side planning.

DATED OCTOBER 26, 2009

PREPARED BY DR. ROLAND R. CLARKE ON HIS OWN BEHALF



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DR. ROLAND R. CLARKE