FAIR TRADING COMMISSION

DECISION

The Barbados Light & Power Company Limited Application for a Review of Depreciation Rates and Approval of the Depreciation Policy

Document No.: FTCUR/DEC/BLPCDP/2022-01 **Date of Issue: March 25, 2022**

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DOCUMENT TITLE: Decision on the Barbados Light & Power Company Limited Application for a Review of Depreciation Rates and Approval of the Depreciation Policy

ANTECEDENT DOCUMENTS

Document Number	Description	Date
No. 1 of 2009	Decision and Order for the Approval of the Depreciation Policy by the Barbados Light & Power Company Limited	February 25, 2009
No. 0002/09	Decision in the Application for a Rate Review by the Barbados Light & Power Company Limited	January 25, 2010

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SECTION 1 - SUMMARY

1. On April 30, 2019, the Barbados Light & Power Company Limited (the "BLPC" or the "Applicant") submitted to the Fair Trading Commission (the "Commission") an Application for the Review of the BLPC's Depreciation Rates, and the approval of a Depreciation Policy, pursuant to Section 16 of the Utilities Regulation Act Cap 282 of the Laws of Barbados (the "URA") (the "Application").

2. On September 26, 2019, the BLPC also submitted an Addendum to the Application which reflected the policy position of the Government of Barbados ("GoB") as it relates to renewable energy in Barbados, as set out in the Barbados National Energy Policy 2019 - 2030 (the "BNEP") (the "Addendum").

3. On June 9, 2020, the BLPC submitted Supplemental Information, to that filed during 2019, specifically, the additional Affidavits of Mr. Ricaido Jennings and Mr. Peter Huck together with updated Depreciation Schedules and 2030 Scenario with 2019 financial data.

4. In making its determination, the Commission considered all evidence submitted by the BLPC, which included sworn affidavits from BLPC's company personnel and an affidavit from its consultant, along with evidence entered by the BLPC in the form of responses to the respective interrogatories from the Commission and approved Intervenors.

5. The Commission also considered the elements of computing depreciation and an examination of the techniques and methodologies that were utilised in a Depreciation Rate Study dated December 31, 2017 submitted by the BLPC (the "2017 Depreciation Study")[1] .

[1] Conducted by Duff and Phelps, a financial consultancy firm, on behalf of the Applicant of the annual depreciation (capital recovery) rates for the depreciable electric property of the Applicant. The procedures and results are summarised in the report.

6. The Commission has determined that the use of the remaining life technique results in depreciation rates that are appropriate, thus leading to fair and reasonable annual depreciation expenses. Additionally, the use of the remaining life method in the 2017 Depreciation Study would calculate depreciation rates that lead to the Applicant's timely recovery of capital costs over the useful economic life of its assets.

7. Pursuant to Section 19(1) of the URA, and based on its analysis, the Commission approves the following components of the Application for the Depreciation Policy of the BLPC:
   - The use of the straight-line remaining life method as employed by the Applicant in determining the asset lives.
   - The net salvage values of the assets as determined by the Applicant for Transmission and Distribution (T&D) and General Plant are considered justifiable and verifiable and are therefore approved.
   - The T&D rates and the General Plant rates derived from asset service lives calculated in the 2017 Depreciation Study, adjusted for December 31, 2019 as follows in Table 1.
   - The Commission does not approve the depreciation rates for generation plant as set out in the Application.

Table 1 Depreciation Rates by Plant Type

Plant Type	2019 Update Depreciation Rates
T&D	3.10%
General	4.09%

8. The depreciation rates approved herein will become effective concurrent with the rates to be approved on the effective date ordered in the ongoing Rate Review[2].

9. Further details of the Commission's reasoning may be found in the body of this Decision.

[2] The BLPC submitted to the Commission its Rate Review Application on October 4, 2021.

SECTION 2 – BACKGROUND

THE APPLICATION

10. Pursuant to Section 16 of the URA, the BLPC filed the Application with the Commission requesting a Review of its Depreciation Rates which were approved by the Commission in 2009[3]. The BLPC specifically sought a review to allow for the approval of a Depreciation Policy that results in a convergence of rates used for regulatory purposes and setting electricity prices and that used for financial reporting purposes". In the Application, the Applicant requested that:

    a) *With effect from January 1, 2019 the Commission approves and adopts the remaining lives and the depreciation rates set out in the Depreciation Study and the unrecovered amounts as reported in the audited financial statements as at December 31, 2018 for regulatory purposes. These are the rates which the Applicant uses for financial reporting and which themselves have been based on depreciation studies;*
    b) *It be allowed to continue to calculate its depreciation rates using the remaining life method; and*
    c) *There be an early hearing of this Application.*

11. The Application was accompanied by the affidavits of the BLPC's representatives, namely, Mr. Ricaido Jennings – Director, Finance, Mr. Johann Greaves – Director, Operations, Mr. Rohan Seale – Director, Asset Management and Mr. Tyrone Alexander – Corporate Controller and the affidavit of Mr. Peter Huck, a consultant engaged by the Duff & Phelps, LLC, the Applicant's external consultants.

12. The Applicant also submitted the following information to reflect its financial data from the year 2019:

    a. the annual depreciation and rates of the BLPC's depreciable electric property as of December 31, 2019 (the "2019 Update"); and

[3] Fair Trading Commission 2009, Document No. 1 of 2009 "Decision and Order for the Approval of the Depreciation Policy by the Barbados Light & Power Company Limited" February 25

b. a scenario of capital recovery of all fossil-fueled generation by 2030 (2030 Scenario) (the "2030 Scenario").[4]

13. Subsequent to the delivery of the Application, the BLPC also submitted the Addendum which reflected the GoB's policy position in connection with renewable energy in Barbados, and more specifically, retirement strategies for generation plants owned by the Applicant. This new policy position required the Applicant to make adjustments to its generation plant. In light of this, the Addendum provided updated depreciation rates for the generation plant which had expected useful lives that exceeded the retirement strategy.

14. As it relates to specific retirement strategies, the Applicant noted that, based on its discussions with the Ministry of Energy, Small Business and Entrepreneurship (MESBE) during its license negotiations, it was confirmed that all existing fossil fuel generation facilities would be retired by December 31, 2030, with the exception of LSD-B[5] which would have a retirement date of 2032[6]. Based on the BLPC's calculation, this retirement of the LSD-B station in 2032 will result in an additional impact on revenue requirements of approximately BDS$2.1 million annually.

15. The Applicant, however, did not update the 2017 Depreciation Study nor the Application to reflect the aforementioned 2030 and 2032 retirement dates. Accordingly, the Commission ruled on the Application based on evidence on the record supporting the retirement dates determined in the 2017 Depreciation Study and in the 2019 Update.[7]

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[4] "The 2019 Update and the 2030 Scenario were prepared by Mr. Peter Huck and attached to the Affidavit of Ricaido Jennings of the BL&P."

[5] LSD – Low Speed Diesel

[6] Jennings, Ricaido. 2021. "Supplemental Affidavit in response to additional Interrogatories from the Fair Trading Commission" April 8

--. 2021. "By way of letter exhibited to the Affidavit of Mr. Jennings." March 19.

16. At the time of the submission of the Application, the BLPC's depreciation rates were those resulting from a Depreciation Hearing held by the Commission in 2009[8], and thereafter approved in an Order issued by the Commission, namely, documents No. 1 of 2009, dated February 25, 2009 (the "2009 Order" and the "2009 Decision"). Subsequent to the 2009 Order, the Commission approved an Application submitted by the BLPC for a Review of its Electricity Rates in a 2009/2010 Rate Review Hearing, namely, document No. 002/09, dated January 25, 2010, incorporating the depreciation rates outlined in the 2009 Order (the "2010 Decision and Order"). In the 2009 Decision, the Commission stated that:

> *"the remaining life techniques yields depreciation rates are appropriate and would ensure that the depreciation expense computed for the test year is fair and reasonable. The Commission has therefore determined that the use of the remaining life method…provided depreciation rates that will lead to the Applicant's timely recovery of capital cost of investment in assets over their useful life".*[9]

17. In the Decision dated May 12, 1983, the Public Utilities Board (PUB) in Schedule 3 set out the original rates used and the computation of the depreciation expense for regulatory purposes in respect of the property, plant and equipment of this Applicant.

18. In both proceedings, the method employed by the Applicant was the straight-line method for calculating annual depreciation, as applied to the historical cost of the assets, and the average service life technique was used. It was determined at those proceedings that this method provided results which achieved the objectives of the depreciation study.

19. Having reviewed and analysed the Application, the evidence submitted by the Applicant, the positions put forward by the Intervenors and the applicable methodologies related to depreciation, the Commission maintains that

[8] Fair Trading Commission 2009, Document No. 1 of 2009 "Decision and Order for the Approval of the Depreciation Policy by the Barbados Light & Power Company Limited" February 25
[9] Ibid

depreciation should recover the capital cost of investment in assets over their useful life.

20. The Commission is of the view that the financial information submitted by the Applicant to substantiate the Application and which was relied upon to prepare the 2017 Depreciation Study is reliable. The Commission was able to utilise this information in order to make its determination.

21. The Commission acknowledges that, subsequent to the Depreciation Study of 2017, the Applicant became guided by the changing policy directives of the GoB as outlined in the BNEP, resulting from the GoB's vision of attaining 100% of energy produced from renewable energy. However, the Applicant failed to revise the 2019 Update to reflect the Policy Directive. Therefore, the Commission is unable to approve the composite rates for generation assets as requested by the Applicant.

LEGISLATIVE FRAMEWORK

22. Under Section 4(3)(a) of the Fair Trading Commission Act, CAP. 326B (the "FTCA"), the Commission is responsible for establishing principles for arriving at the rates to be charged by service providers. The Commission also has this duty under Section 3(1) (a) of the URA, which states:

> *"The functions of the Commission under this Act are, in relation to service providers, to*
>
> *(a) establish principles for arriving at the rates to be charged".*
>
> *(b) Set the maximum rates to be charged;*
>
> *(c) Monitor the rates charged to ensure compliance;*
>
> *(f) carry out periodic reviews of the rates and principles for setting rates and standards of service.*

23. Moreover, Section 3(2) of the URA stipulates that:

"In establishing the principles referred to in subsection 1(a) the Commission shall have regard to:

a) the promotion of efficiency on the part of service providers;
b) ensuring that an efficient service provider will be able to finance its functions by earning a reasonable return on capital; and
c) such other matters as the Commission may consider appropriate.

24. In accordance with Section 2 of the FTC (Amendment) Act 2020 and the Utilities Regulation (Amendment) Act 2020, "principles" mean the formula, methodology or framework for determining a rate for a utility service.

25. Additionally, Section 2 of the URA states that "rates" include

a) *"Every rate, fare, toll, charge, rental or other compensation of a service provider or renewable energy producer;*
b) *A rule, practice, measurement, classification or contract of a service provider or renewable energy producer relating to a rate; and*
c) *A schedule or tariff respecting a rate;"*

26. By virtue of Section 16 of the URA, where the Commission has not fixed a period of time in accordance with Section 15(1), the Commission may, on its own initiative or upon an Application by a service provider or consumer, review the rates, principles and Standards of Service for the supply of a utility service.

27. The BLPC submitted the Application to the Commission pursuant to Section 16 of the URA and the Utilities Regulation (Procedural) Rules, 2003 (the "URPR"). In light of this provision, the BLPC correctly filed an Application with the Commission for a review of depreciation rates and approval of its Depreciation Policy. Therefore, the provisions of the URA and URPR governed the Hearing.

28. By virtue of Section 5 of the FTCA, and Section 6(1) of the URA, the Commission exercised its power to sit, hear and determine this Application and in accordance with Rule 4 of the URPR, the Commission issued two (2) Procedural Directions which governed the conduct of the proceedings.

29. In light of the COVID-19 pandemic and the Government of Barbados' directive to exercise social distancing protocols, the Commission, pursuant to Rule 37(1) and (2) of the URPR determined that the hearing of the Application would be by way of a Written Hearing and the proceedings would be disposed of on the basis of the documentation filed by the parties.

30. The Commission also exercised its powers pursuant to Rule 19(1) of the Utilities Regulation (Procedural) Rules 2003 to hear expert witnesses during the hearing.

BURDEN & STANDARD OF PROOF

31. In accordance with Section 14 of the URA, "*in any proceeding before the Commission involving an existing or proposed rate of a service provider, the burden of proof to show that the rate is fair and reasonable and in accordance with the principles established by the Commission shall be upon the service provider*". Consequently, the Applicant must discharge this burden by providing sufficient evidence for the Commission to grant the relief that the Applicant is seeking. Hearings before the Commission

are equivalent to civil proceedings in a Court of Law. The standard of proof in this instance would be the same as a civil proceeding in a Court of Law.

32. Section 133 (1) of the Evidence Act, CAP 121 of the Laws of Barbados provides that:

> *"In a civil proceeding, the Court shall find the case of a party proved if it is satisfied that the case has been proved on the balance of probabilities."*

33. In this regard, the Commission must be satisfied that the Applicant's case has been proved on a balance of probabilities.

REVIEW PROCESS

34. The Commission's assessment of the Application involved an examination of the proposed depreciation rates, the Depreciation Policy, the 2017 Depreciation Study, and supplemental data along with updated financial information related to the depreciation studies. This assessment was carried out with the assistance of external consultants, Secretariat Economists (formerly known as Economists Incorporated).

35. On March 11 2021, the Commission issued a Public Notice[10] in the local newspapers inviting interested parties to submit letters of intervention to be granted intervenor status in the proceeding. Subsequently, the Ministry of Energy and Water Resources (MEWR) requested and was granted intervenor status in the proceeding. The individuals representing the MEWR were Mrs. Samantha Cummins and Dr. Theodore Kury, who was representing the MEWR as an expert witness.

36. On June 5, 2020, Barbados Renewable Energy Association (BREA) filed a Notice of Motion for late intervention in accordance with Rule 65 of the URPR, citing non-receipt of their previously submitted request for intervenor status. BREA's request for late intervention was approved by the Commission. The Commission also granted BREA an extension of time by which to make its submission on the Application. BREA also submitted interrogatories to the Applicant. Together, the MEWR and the BREA are described herein as the "Intervenors".

37. The submissions of the Intervenors, including affidavits and interrogatories, the Applicant's submissions and the Commission's own analysis formed the basis for the written hearing whereby the Commission assessed and subsequently made a determination on the Application.

The Commission thanks the various parties for their input.

[10] Public Notice published March 11, 2020 in the local newspapers

SECTION 3 – DEPRECIATION

38. The Federal Energy Regulatory Commission ("FERC") in its Uniform System of Accounts defines depreciation as: "*…the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of plant in the course of service from causes which are known to be in current operation and against which the utility is not protected by insurance. Among the causes to be given consideration are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand and requirements of public authorities, and in the case of gas companies, the exhaustion of natural resources.*"

39. The purpose of a depreciation study is to calculate, and provide underlying justification and documentation for, the annual depreciation rates and accruals for a utility plant in service for financial and ratemaking purposes. The study provides an analysis of the mortality characteristics, net salvage rates and adequacy of depreciation accruals and recorded depreciation reserves for each rate category. The annual depreciation rates are incorporated as a component of the utility's operating expense, while the accumulated depreciation is a component of the utility's rate base[11], which is the net amount of investment in utility plant and assets in service on which a reasonable rate of return may be earned. Depreciation rates are essential in determining the depreciation expenses and are therefore a direct input in the setting of rates to be charged to the consumer.

40. It is important to ensure that in the assessment of a utility's depreciation rates, the interests of both the utility and the rate payers are fairly balanced. Therefore, the service provider is afforded the opportunity to earn an adequate return on investment to sustain its business and the consumer receives service at a reasonable rate.

[11] Plant in Service, less Accumulated Depreciation, results in the Net Plant which is the largest component of the utility's rate base.

41. Additionally, if a utility's assets are deemed as stranded assets, that is, "*assets that have suffered from unanticipated or premature write downs, devaluations or conversions to liabilities*", once the cost of the assets have been deemed by the regulator as prudently incurred, the cost recovery by the utility over a shortened time frame will be taken into consideration in the determination of reasonable depreciation rates. The full cost associated with this recovery will be borne by the consumer. The existence of stranded assets will generally increase depreciation rates, and result in higher tariffs.

42. The determination of depreciation rates requires assessing the appropriate average service lives and net salvage for each plant account or groups of assets within an account. The annual depreciation accrual reflects the allocation of unrecovered cost of a tangible asset over its useful or service life and is calculated by applying a depreciation rate stated as a percent of original cost plant balances.

43. The Commission recognises that the determination of depreciation rates is a critical process. This importance is emphasised by the National Association of Regulatory Utility Commissioners (NARUC) in its text "Public Utility Depreciation Practices" August 1996 at page 22.

    a. "Prescribing depreciation rates is one of the most important regulatory Commission activities impacting consumer rates. The estimation of depreciation parameters is not, of course, a scientifically exact process, since it involves a large element of informed judgement. At the same time, it cannot be an arbitrary figure selected for convenience because it must allocate the full cost over the life of the property in a rational manner. The depreciation rate is a calculated figure and there is a zone of reasonableness within which the underlying parameters may be expected to lie."

44. Depreciation is intended only for the purpose of recording the periodic allocation of cost in a manner properly related to the useful life of the plant. It is not

intended to achieve a desired financial objective or to fund modernisation programs.

45. Using the NARUC manual as guidance, the Commission notes that the factors of obsolescence, technological changes, wear and tear, and other relevant contingent factors are pertinent with respect to the impact of the remaining lives of a particular asset or asset group.

46. The determination of depreciation rates must take into consideration the transition of the Barbados economy to one that is characterised by 100% renewable energy generation by 2030. This transition has created stranded assets, which will be phased out of usage by the utility by 2030. As previously stated at paragraph 41 the full cost recovery of these assets will be borne by the consumers of Barbados. Any incorporation of stranded assets in calculating depreciation rates must be duly filed or updated accordingly as part of a Depreciation Study used to justify the Application.

THE DEPRECIATION STUDY – BRIEF SUMMARY

47. The aim of a Depreciation Study is to determine the appropriate book depreciation factors and rates to be applied to the property in service to enable recovery of the plant investment, adjusted for net salvage, over its remaining useful life, in support of this Application. The study notes that "*the methods used to calculate depreciation and the life and net salvage analysis techniques employed are the same generally accepted methods and techniques that are used throughout the utility industry and that were used in the prior Company studies*". [12]

48. The principle activities involved in conducting a depreciation study can be grouped in the following five major tasks (explained below):

    a) Data Collection
    b) Life Analysis and Estimation; and

[12] The Barbados Light & Power Company Limited Depreciation Rate Study As of December 31, 2017 Prepared for The Barbados Light & Power Company Limited: Duff & Phelps

c) Net Salvage Analysis;
d) Depreciation Reserve Analysis; and
e) Development of Accrual.

Data Collection

49. In order to complete an adequate statistical assessment of utility assets, historical data, including purchases, transfers and retirements and sales of plant activities are used. This data is used to measure the service life of normal retirements. Semi-actuarial techniques are used to examine un-aged plant data. Actuarial techniques require more extensive databases to apply statistical methods to life analysis. The availability of detailed information is dependent upon an accounting system that supports aged property records.

Life Analysis and Estimation

50. Life estimation reflects the estimation of the mortality characteristics of a plant category. Using statistical techniques, and considering the history of the plant grouping, the life analysis estimates the service life of the plant (grouping). Survivor curves are used in this process, with different curves showing differing forces of retirement.
51. Survivor curves are further used in estimating the expected remaining service life of the plant. The projected life curve considers how much the past is reflective of the future. This determination must take consideration of previous mortality forces and how these forces are expected to continue, or differ from experience.

Net Salvage Analysis

52. An estimation of the net salvage rate applicable to future retirements is usually obtained from an analysis of gross salvage and removal expenses realised in the past. The net salvage can be negative when the removal expense exceeds the value of the gross salvage and can result in higher depreciation rates.

Depreciation Reserve Analysis

53. The depreciation reserves analysis compares the timing of and amount of reserve set aside to cover anticipated retirement of assets with what is actually required at the time of retirement. The difference between the required depreciation reserve and the recorded reserve provides a measurement of the expected excess or shortfall that will remain in the depreciation reserve if corrective action is not taken to extinguish the reserve imbalance.

Development of Accrual Rates

54. The objective of depreciation accounting is the allocation of cost over the economic life of an asset in proportion to the consumption of the service potential. The service potential of an asset is the present value of the future net revenue or cash inflows attributable to the use of that asset. The proportional cost allocation is often approximated by using depreciation methods that employ time instead of net revenue as the base.

55. The aim of this analysis is to determine depreciation rates that are fairly calculated using justifiable methodologies, contributing to electricity tariffs that are fair and reasonable. Where applicable, the analysis is applied to the different asset classes of T&D, General Plant, and Generation Plant. T&D and General Plant are addressed simultaneously.

56. A variety of industry-standard depreciation techniques such as the whole life or the remaining life technique can be appropriately used to allocate the depreciable amount of an asset on a systematic basis over its useful life.

57. The straight-line remaining life technique assumes that the asset depreciates by an equal percentage of its original depreciable value for each year that it is used. The remaining life depreciation technique allows for adjustments to depreciation rates over the remaining service life of plant when necessary to make up for under-accrual or to compensate for over accrual.

SECTION 4 – ANALYSIS OF EVIDENCE

Depreciation Rates Submitted and Approved

Table 2. Proposed Depreciation Rates (2019 and 2017), Rates and Existing Rates as approved in 2009

Plant Type	2019 Update Depreciation Rates	Proposed 2017 Study Depreciation Rates (Weighted average)	Present Depreciation Rates (2006 Study)
Generation	3.52%	2.65%	3.03%
T&D	3.10%	3.08%	3.46%
General	4.09%	3.53%	3.74%
Total Plant (Weighted Average)	**3.37%**[13]	**2.91%**	**3.28%**

58. Table 2 provides details of the rates that were approved in the 2009 decision, alongside the 2017 Depreciation Study and the updated 2019 depreciation rates. The 2017 rates requested were lower than the existing regulatory depreciation rates approved in 2009, with the exception of general plant with reasons highlighted in the discussion below.

59. The updated depreciation rates submitted by the Applicant on June 9, 2020 were higher than the rates currently in existence, with a weighted average of 3.37% compared to the current weighted average of 3.28%. In comparison, the depreciation rates that were submitted in the 2017 Depreciation Study were lower than the rates currently in existence, with a weighted average of 2.91%, compared to the existing 3.28%. The increase in proposed weighted average rate is reflective of the bigger increase in life span of generating units and the slower growing generating plant growth, especially when compared to T&D plant growth. Additionally, net salvage for generation plants remains about the same as in the prior 2012 study, while the average net salvage for T&D plant has increased.

[13] Total Plant (Weight Average) figures are derived from dividing the sum of Annual Depreciation ($) for Total Generation Plant and Total Depreciable T&D and General Plant by Plant Balance as of December 31 of the year on which respective Depreciation Study data are based.

60. It is noted that where the depreciation rates are lower, the depreciation rate inputs into the overall cost of service will be lower, resulting in a lower revenue requirement, assuming all other things being equal, that is, no other changes in the cost-of-service inputs. The net impact on the revenue requirement will depend on changes in other inputs, such changes in expenses, and updated total net plant.

61. In the instant Application, the BLPC requested that the Commission approve the capital balances, remaining lives and depreciation rates[14] determined as a result of the 2017 Depreciation Study. This 2017 Depreciation Study continues to use the straight-line method and the remaining life technique. In June 2020, on behalf of the Applicant, Mr. Huck submitted an affidavit to update account and plant balances through December 31, 2019.

62. In analysing the Depreciation Study, the Commission ensures that the study incorporates best practices that enables the utility rates to meet the following goals:

    a) ***Efficiency:*** the on-going annual decrease in the plant's economic value should be reflected in rates as much as it is practicable. The period of time over which the fixed capital cost is allocated to the cost of service should be equal to the period of time over which an item renders service, i.e., the asset service life (ASL).

    b) ***Intergenerational Equity***: the depreciation method needs to ensure that tariff levels minimise inter-temporal cross subsidies, this is achieved by determining an appropriate allocation of the costs associated with electricity service between customers of today and customers of the future so that each generation pays their fair share of the depreciation expense for the plant used to serve them; and

    c) ***Consistency or ease of replicability***: methods should be transparent and allow full recovery of the cost of plant and the net cost of removing

[14] 2019. "Application pursuant to Section 16 of the URA Cap 282 for approval of the depreciation policy of the BLPC." April 30

it, using a stable set of rules. To the extent that they need to be modified or improved, the reasons need to be thoroughly explained to investors and the regulator in order to reduce uncertainty for the investor regarding future changes.

TRANSMISSION & DISTRIBUTION PLANT & GENERAL PLANT

BLPC's Position

63. The Applicant proposes to continue using the straight-line remaining life technique[15][16] in determining the depreciation rates, as approved in the 2009 Depreciation Policy Decision.

64. The depreciation rates for T&D and General plant are calculated using the remaining life technique, which uses the remaining life of the asset, expressed as the difference between the average service life and average asset age. Generally, past experience gives an indication of life trends which can be used to develop estimates of the life of the assets. Studies tend to use "survivor curves[17]" that represent the portion of original plant remaining in service each year. The development of smooth survivor curves from mortality data using actuarial methods is generally considered to be the most accurate and reliable method for depicting past experience, when plant vintages are available.[18]

65. In this Application, BLPC's consultant employed the Simulated Plant Record (SPR) methodology[19], relying on historical retirements and plant balances and fitting them with the industry-accepted survivor curves, also known as Iowa

[15] Straight life remaining life method is the method which seeks to recover the undepreciated original cost of depreciable property, less any future net salvage, over the remaining life of the property.
[16] Page 2 The Barbados Light & Power Company Limited Depreciation Rate Study As of December 31, 2017
[17] A survivor curve is a graph showing the number or proportion of individuals surviving to each age for a given species or group.
[18] The Barbados Light & Power Company Limited Depreciation Rate Study As of December 31, 2017, page 3 Prepared for The Barbados Light & Power Company Limited: Duff & Phelps
[19] "*SPR method provides an estimate of both dispersion and average service life through an iterative procedure that attempts to generate a set of synthetic plant balances from a known mortality distribution that will duplicate the actual plant balances of a given property account*" – A Test Procedure for the Simulated Plant Record Method of Life Analysis, White, R. E., and H. A. Cowles. "A Test Procedure for the Simulated Plant-Record Method of Life Analysis." *Journal of the American Statistical Association* 65, no. 331 (1970): 1204-212. Accessed July 14, 2021. doi:10.2307/2284286.
This is the preferred method when historical retirements or plant balances are known, but vintage retirements are not known or not used. Generally, the best fit curve has the lowest index of variance/highest conformance index, based on the actual retirement data. However, informed judgement plays a role; strict adherence to results based on historical data may not be appropriate.

Curves[20]. These standard curves take into account the general dispersion of retirement patterns observed or expected in a group of assets.

Intervenors' Position

66. Intervenor Mr. Kury on behalf of MESBE did not take issue with the fundamental methodology underlying the straight-line method, remaining life technique, or whole life technique. However, Mr. Kury questions the validity of certain inputs underlying the analysis.

67. In his affidavit dated June 22, 2020, Mr. Kury makes reference to Mr. Huck, stating as follows: "*In Paragraph 20 of witness Huck's affidavit, he states that an analyst must exercise "significant judgement" in addition to mathematical procedures.*" Mr. Kury posits that "*This raises the possibility that mathematical procedures have been rejected in favor of subjective determination of depreciation rates. The rates resulting from this subjective judgement may not be fair to either the utility or to its customers.*[21]" For example, Mr. Kury asserts that Mr. Huck's selection of a certain curve as the best fit Iowa curve for Account 361 is flawed, because the indicators of variance for this curve are higher than those of 12 other curves, where each of these 12 other curves correspond to longer asset lives than the selected 44 years associated with right-modal curve R4[22].

BLPC's Rebuttal

68. Mr. Huck rebuts Mr. Kury by stating that as a matter of standard practice, quantitative SPR results must be complemented by subjective informed judgment, and "*indicators of goodness-of-fit, a review of recorded accounting data, knowledge of the type of property involved, and the experience of others with similar property, including the depreciation parameters of the previous Company study, are used*

[20] Iowa Curves are survivor curves. There are a set of 31 standardised patterns of asset retirement dispersions – Right-Modal Curve, Left Modal Curve, Symmetrical and Original Modal Curve. The curves were developed using statistics and observed life tables. Each curve represents a probability distribution. They are helpful to make realistic forecasts of the remaining useful life of groups of assets.

[21] Kury, Theodore Joseph 2020 "Affidavit" June 22

[22] Kury, Theodore Joseph 2020 "Final Submission Affidavit Paragraphs 6, 7" October 9

as aids in these determinations." Huck's rebuttal Affidavit at paragraph 11, citing Exhibit No. PH-1. Mr. Huck specifically rebuts Mr. Kury's characterisation of his selection of 44 R4 for Account 361, and states that although 44 R4 was not the "best fit" SPR result, it was the most appropriate average service lives (ASL) for Account 361 based on a combination of SPR result and informed judgment[23].

The Commission's Findings

Use of the Remaining Life Approach

69. It is important to periodically review and update, as appropriate, the remaining life depreciation rates to ensure that the Company charges proper amounts of depreciation to expense in each financial reporting period.

70. If the estimated ASL of the asset changes, or the net salvage value of the asset changes, then the depreciation rate is likely to change, depending on how many years of service of the asset is left.

71. The advantage of the remaining life method is that it allows for stability by minimising the fluctuations of expense from one accounting period to the next while allowing for changes in the depreciation rate as needed to assign costs over the entire service life of the asset.

72. Under the remaining life method, the annual depreciation accrual rates use the average remaining service life and net salvage characteristics for each depreciable property group.[24]The remaining life method calculates depreciation rates by allocating unrecovered depreciable plant, (*i.e.* original cost less accumulated

[23] Huck, Peter 2020 "Rebuttal Affidavit" November 2

[24] Most depreciation studies rely on a common convention of accounting known as the "group" method. NARUC considers this approach reasonable since assets within accounts may include wooden poles and other such components of the transmission and distribution systems that cannot be tracked on an individual basis given the small relative value of each individual asset. The broad group procedure assumes that under-accruals resulting from early retirements are offset by over-accruals on assets that outlive the average service life. Depending on how homogeneity of the established depreciation groups, the remaining life approach may in some cases fail to provide an accurate allocation of net plant to years for the newer plant with a longer remaining service life than other plant in the group.

depreciation to date from original plant and future net salvage) in equal amounts to each year of remaining service life.

73. The use of the remaining life method is consistent with the definition of depreciation used by FERC and NARUC. Additionally, the BLPC has correctly applied the depreciation rates (determined using the remaining life method) to a rate base using historic costs. The BLPC has traditionally used historic accounting costs as opposed to replacement plant costs for both regulatory and financial reporting purposes. This method is used by the majority of utilities in the US and it is also widely used in Canada.

74. The depreciation rates should be reviewed periodically to reflect the changes in estimated remaining service life and net salvage value as new information becomes available. The advantage of the remaining life method is that the average remaining life can be calculated with increasing accuracy as the asset gets older. The remaining life depreciation method automatically adjusts for past under- and over-accruals by using the accumulated book depreciation reserve in the depreciation rate calculation.

75. BLPC depreciates all the property accounts of General Plant, with the exception of Accounts 390 (building) and 393.1 (Furniture and Fixtures)[25] on an individual asset basis. The BLPC consultant considered that the use of the whole life method , according to the equation (100% - salvage%)/ASL was appropriate to be used to determine depreciation rates for these items because each asset should depreciate according to its own expected service life, with the net plant balance being zero when it is removed from service. .

76. The remaining life method is more efficient than whole life method because it is better at aligning cost recovery with the use of the assets. On the other hand, the whole life method is more likely to produce excessive or deficient depreciation expense. When using the whole-life depreciation approach, there may be years

[25] The Barbados Light & Power Company Limited Depreciation Rate Study As of December 31, 2017 Prepared for The Barbados Light & Power Company Limited: Duff & Phelps page 186

with no depreciation charge for a group of assets even though the assets are still being used for service.

77. The remaining life method is considered a more suitable method to determine depreciation rates as it better reflects the actual service life of the asset. Additionally it is a more flexible methodology, allowing adjustments to be made as the assets age. It is less likely to produce depreciation expenses that are out of line with the life and value of the asset. Therefore, the Commission approves the continued use of the straight-line remaining life method to calculate depreciation rates as it serves to achieve the goals of efficiency, intergenerational equity and facilitates replication, as long as the inputs used to estimate the rates are as accurate as possible.

Asset Life Estimates

78. In general, past experience gives an indication of life trends which can be used to develop asset life estimates. Studies tend to use a survivor curve that represents the portion of original plant remaining in service each year.

79. The development of smooth survivor curves from mortality data using actuarial methods is generally considered to be the most accurate and reliable method for depicting past experience, when plant vintages are available.[26] There was not enough detail in the BLPC's T&D plant accounting data to rely entirely on the actuarial method; as a result, BLPC's consultant employed the Simulated Plant Record (SPR) methodology, relying on historical retirements and plant balances and fitting them with Iowa curves. These standard curves take into account the general dispersion of retirement patterns observed or expected in a group of assets. Iowa curves are widely accepted in the energy industry to identify the

[26] Ideally the utility should record the dollars in major accounts by year of placement (plant vintage), and related retirements to the year of placement. Actuarial methods are desirable for large groups of property or where the total investment in an account is large. This information affords an age distribution of the dollars of plant by year of placement which data permits more accurate determination of remaining lives.

appropriate depreciation parameters by plant accounts as they provide a good means of extrapolating incomplete survivor curves. Fitting of historical data to the available Iowa Curves requires considerable subjectivity; indeed, oftentimes a visual comparison is used to determine "best fit" when the actuarial method is employed.

80. When the SPR method is used, it is standard industry practice to utilise rating scales for curve fitting. However, the Commission recognises that subjective judgment plays a role in curve selection even when there are quantifiable determinations of goodness-of-fit based on indices of variance. As a result, strict adherence to results based on historical data may not be appropriate. Yet at the same time, there is a valid concern that "judgment" can be a nebulous catch-all phrase used to justify, without any support, adjusting the results based on data which may be arbitrarily included or excluded. Service life estimates must be based on more than mere conjecture.

81. In response to the Commission's interrogatories dated March 18, 2021, Mr. Huck provided work papers[27] reflecting his notes on his selected Average Service Life SPR analysis as they apply to the 2017 Depreciation Study. His notes indicate for certain accounts (*i.e.*, Accounts 361 and 373) the SPR analysis is largely irrelevant due to historical and forecasted retirements. His notes also reference the goodness-of-fit ratings as set out in the NARUC manual[28] for SPR analyses; witness Huck's comments on why certain curves fit poorly, then incorporates his personal judgment and curve selection, without additional provision of mathematical evidence.

82. The Applicant has provided an explanation of the factors that may influence changes in future asset lives by suggesting that the extension of asset lives will be enabled by use of new technology in undertaking upgrades that improve the

[27] Barbados Light & Power Company Limited 2021 "Correspondence to the Fair Trading Commission with the Affidavit of Mr. Peter Huck" March 26

[28] See generally "Public Utility Depreciation Practices", National Association of Regulatory Utility Commissioners, 1996.

condition of existing generating units, station and lines. In other cases, technology advances may actually lead to shorter lives of older plants as they get replaced with better, more advanced equipment or as required by regulatory bodies and result in early retirements of these older plants[29]. Having reviewed the documents submitted by the Applicant, and finding those documents and the approach and results reasonable, so long as proper early retirements are accounted for, the Commission finds this approach appropriate.

Table 3. Updated Asset Life in 2017 Study and in 2019 Update compared to Authorised Asset Lives

Plant Type	Updated Asset Life (2019 Update)	Updated Asset Life (2017 Study)	Asset Life Range (2006 Study)
Generation	[12 – 49]	[20 (new solar) – 47]	[25 - 35]
T&D	[17– 44]	[17 – 44]	[13 - 37]
General	[6 – 45]	[6 – 45]	[6 - 45]

83. The Commission also reviewed the calculation of the average remaining life of T&D plant and general plant, and found it consistent with standard methodology. The lengthening of the ASL in the 2017 Depreciation Study is comparable to the trends observed in US utilities, where significant investment is planned, in addition to the need to modernise the grid and obtain increased safety and reliability. As an example, AMI meters with an average service life of 18 years and net salvage of 0% is consistent with industry practice.

84. As referenced in paragraph 79, visual examination to determine the best fit of curves is often utilised by experienced analysts. An example in which visual comparison is used to determine "best fit" can be seen in the case of Pacific Gas and Electric Company Initial Decision Docket ER 16-2320 – 002 issued on October 1, 2008 as a reference for the use of visual versus a purely mathematical curve

[29] The Barbados Light & Power Company Limited Depreciation Rate Study As of December 31, 2017 Prepared for The Barbados Light & Power Company Limited: Duff & Phelps Page 5

selection. In that decision, it was determined that visual curve selection was acceptable. The decision noted that there are two different ways to utilise the mathematical comparison to determine which Iowa Curve best fits the historical data. The National Association of Regulatory Utility Commissioners 1996 publication, *Public Utility Depreciation Practices* (NARUC Manual), says that most analysts rely solely on the mathematical comparison to make that determination. The NARUC Manual states, "While visual matching is still used, it is more time consuming than mathematical matching and so is generally used only in educational settings or as an adjunct to mathematical matching."[30] The Manual does not expressly say that a mathematical comparison is superior to a visual comparison, but it does indicate that the vast majority of analysts do not consider the benefits of the latter to be worth the effort involved in undertaking it.

85. However, in *Depreciation Systems*, published two years ***(specific year)*** earlier, W.C. Fitch and Frank K. Wolf proposed using the mathematical ranking as a screening device to determine which Iowa Curves should be selected for a final, visual comparison. The treatise says:

> *On the surface, the removal of judgment from the fitting process may appear to be an advantage, but blind acceptance of mechanical fitting processes will occasionally but consistently result in poor results. A better procedure is to use the least squares method to select candidates for the best fit. Comparison of the sum of squares will reveal situations where the difference between the best choices compare them to the theoretical curves. This can be done quickly on a computer with graphic capabilities so that the analyst need not use time to plot the observed curve by hand. The analyst can consider single points that contribute significantly to the sum of squares but that may deserve less*

[30] *See Application of AEP Tex. Cent. Co. For Auth. to Change Rates*, SOAH Docket No. 473-07-0833 at n.436 (2007). This document is from a proceeding in another jurisdiction and was not entered in this proceeding. However, part of the foregoing passage was quoted in TANC's initial brief, and the foregoing passage was quoted in PG&E's reply brief. As the two adversaries have chosen to discuss the passage, it is deemed a part of the record in this case.

weight than other points. Fits at various sections on the curve can be evaluated and weighted using the judgment of the experienced analyst[31].

86. The Commission considers that the use of the straight-line remaining life approach achieves the objectives of a depreciation study. Additionally, the Commission considers that the ASL of the assets reviewed have been justified so that for T&D and General Plant, the Commission considers the Applicant's approach adequately supported, and its results fair and reasonable.

GENERATION PLANT

BLPC's Position

87. For generation plant, the Applicant in the 2017 Depreciation Study used the specific life span of each generation unit based on the Applicant's current investment and retirement plans. The generating life spans proposed by the Applicant were largely comparable to those employed by other electric utility life spans used in calculating their generation depreciation rates. The study report does not provide detail on the utilities that were compared. In the 2019 Update submitted by the Applicant in June 2020[32], Mr. Huck states that, "*for Generation Plant, remaining lives for the 2019 Update were calculated by subtracting the study date of December 31, 2019 from the estimated retirement date of each generation unit*[33]."

Intervenor's Position

88. In the Affidavit of Mr. Kury[34] he asserts that Mr. Huck's use of the Applicant's current policy and plans, instead of a mathematical model, to determine generation asset retirement dates in the Depreciation Study constitutes circular reasoning. Mr. Kury states that this methodology incentivises the Applicant to

[31] Ex. PGE-0045 at 34:10-24 (citing Frank K. Wolf & W. Chester Fitch, *Depreciation Systems*, 47-48, (1994) (*Depreciation Systems*)).
[32] Barbados Light & Power Company Limited 2020 "Correspondence to the Fair Trading Commission" June 9
[33] Huck, Peter 2020 "Supplemental Affidavit, paragraph 10" June 9
[34] Kury, Theodore Joseph 2020 "Final Submission Affidavit, paragraph 4" October 9

alter their policies and plans to optimise their depreciation rates, which could in turn improperly inflate the Applicant's revenue requirement.

Applicant Rebuttal

89. Mr. Huck rebuts Mr. Kury's assertion by stating that, *inter alia*, "*a mathematical model based on the standard statistical analyses of life, actuarial or simulated, cannot be relied on to give accurate life indications for generating facilities*"[35] .

Intervenor's Rebuttal

90. Although Mr. Kury criticises the methodologies employed by Mr. Huck and the rates resultant in the Applicant's 2017 study, he proposes no alternative rates on behalf of the intervenor.

The Commission's Findings

Asset Life Estimates

91. For Generation plant, the 2017 study used the specific life span of each generation unit based on the Applicant's current investment and retirement plans. The generating life spans expected by the Applicant were checked for reasonableness by the study consultant mainly by comparing them with other electric utilities' studies. The study does not provide detail on the utilities that were compared but the Commission's consultant is of the view that the service lives are within the range of the values used in the US.

92. A comparison of the Plant Balance columns between Exhibit A (2017 Depreciation study) and Exhibit PH2-A (2019 Update) show that, for accounts such as Spring Garden Steam Equipment, the Applicant reduced the Average Service Life from 27.7 years to 12.7 years. This 15-year reduction in Average

[35] Mr. Huck goes on to explain that "Due to the nature of the property of generating facilities, their retirements reflect location-type property life characteristics [*summary omitted*].
[For the preceding reasons,] the standard statistical analyses of life, actuarial or simulated, cannot be relied on to give accurate life indications for generating location-type property." Rebuttal Affidavit of Peter Huck paragraph 6 dated November 2, 2020.

Service Life may or may not be reasonable; however, it was not supported by the record nor was it explained in the narrative affidavit of the Applicant's witness. For this reason, the Commission finds the depreciation rates for generation plant are insufficiently supported.

93. The Commission finds the Applicant's methodology employed in the 2017 study to be reasonable, however the 2019 Update results have been assessed as inadequately supported. The Commission finds generally that the Applicant's methodology for calculating Generation plant depreciation rates is reasonable.

94. Using this approach, the asset balances as of December 31, 2019 do not, based on the Commission's analysis, result in the depreciation rates for generation plant submitted by the Applicant. Specifically, the Commission is of the view that the respective 25% and 20% depreciation rates for accounts Garrison GT No. 2 and Spring Garden Steam Equipment cannot be included in the depreciation rate calculation without verifiable justification as requested[36]. Therefore, the higher rates assigned to Generation plant accounts in the 2019 Update compared to the 2017 Study are found to be unsupported.

95. The 2017 Depreciation Study generation unit retirement dates were extended further into the future compared to the 2008 study and the 2009 study; however, as mentioned above, certain years were adjusted lower in the 2019 Update. In the 2017 Depreciation Study, life spans ranged from 20 years to 47 years with an average of more than 30 years. In the 2019 Update, life spans ranged from 12.7 years to 49 years with an average of 24.9 years. The study identifies a shorter life span (20 years) for the new solar plant as compared to other generation plant types. BLPC has also added a new battery storage system for which the study uses a depreciation rate of 10%, based on the manufacturer's warranty period. There were no changes in net salvage values in the 2017 Depreciation study nor in the 2019 Update, which generally reflect those authorised by the Commission in the 2009 Decision.

[36] FTC Interrogatories dated March 18, 2021 and Supplemental Affidavit of Peter Huck dated March 26, 2021

96. For illustrative purposes, the Generation plant rates proposed by the Applicant have been examined by modeling and comparing new plant additions since December 31, 2017 (it is assumed, for the purposes of the model, that this plant was added on January 1, 2019) and re-stating the average remaining lives based on the Applicant's proposed service lives, which were found to be adequately supported in the 2017 Depreciation Study. It was found that the recalculated Generation plant rates were significantly lower than those proposed by the Applicant in the 2019 Update. Much of this divergence may be attributable to the Applicant's arbitrary assigning of a 25% depreciation rate to Garrison GT No.2 and a 20% depreciation rate to Spring Garden Steam Equipment. Both of these accounts were assigned a 0% depreciation rate in the 2017 Depreciation Study.

Table 4. Comparison 2019 Update with Applicant Proposed Depreciation Rates (2019 and 2017), and Existing Rates approved in 2009

Plant Type	2019 Update Depreciation Rates	Proposed 2017 Study Depreciation Rates	Present Depreciation Rates (2006 Study)
Generation	3.52%	2.65%	3.03%
T&D	3.10%	3.08%	3.46%
General	4.09%	3.53%	3.74%
Total Plant (Weighted Average)	**3.37%**	**2.91%**	**3.28%**

97. Accordingly, the Applicant has not supplied compelling evidence why the account balances for Garrison GT No 2 and Spring Garden Steam Equipment differ so drastically in the 2019 Update from the numbers reported in the Depreciation Study of 2017.

98. Therefore, the Commission does not approve the depreciation rates proposed for Generation Plant.

NET SALVAGE

BLPC's Position

99. In the 2017 Depreciation Study, the BLPC states that *'In conducting the Depreciation Study, the Applicant also seeks to accurately measure the consumption of its assets by determining the assets' productive life, net salvage value and cost of removal"*. The residual value is the estimated amount that an entity would obtain from disposal of the asset, after deducting the estimated costs of disposal, if the asset were already of the age and in the condition expected at the end of its useful life. Such cost of an item of Property, Plant and Equipment includes the cost of its dismantlement, removal or restoration; the obligation an entity incurs as a consequence of installing the item. It is possible to have a negative net residual or salvage value indicating that net costs will be incurred in retiring the asset.

100. The Depreciation Study notes that :

> "*The development of net salvage for generation plant largely relied upon the experience of other electric utilities with generating dismantling costs. The specific historical information was generally relied upon for the net salvage of T&D Plant and of General Plant, together with the knowledge of the nature of the property and the experience of other electric utilities, as well as the practice in the prior BLP studies."*[37]

101. The Study further states that "*By account, the concluded net salvage ranged from 0% for Underground Cables and Meters to negative 14% for Poles"*.
The Applicant proposed a weighted composite net salvage rate of -4.1% in the 2017 study[38].

Intervenors' Position

102. No intervenor objected to the net salvage values proposed by the Applicant.

[37] The Barbados Light & Power Company Limited Depreciation Rate Study As of December 31, 2017 Prepared for The Barbados Light & Power Company Limited: Duff & Phelps
[38] Ibid

Commission's Findings

103. The Commission is of the view that in computing depreciation, the expected residual value or net salvage value must be determined. The service value of an asset is its original cost less its net salvage. The net salvage is the original amount that the utility can expect to receive when removing an existing asset, net of any cost of removal or dismantling of the asset. In some instances, this may be higher than salvage. It is necessary to include an estimated net salvage in the calculation in order to reflect the true cost to the utility which is to be recovered from the consumer.

104. As a starting point, the Commission notes that in the 2006 Depreciation Study and approved by the Commission in the 2009 Order, the Applicant determined a weighted composite net salvage value of -5%. The element of net salvage was not considered when the PUB approved depreciation rates in 1983.

105. The Applicant's 2017 Depreciation Study reviewed historical salvage and cost of removal on an account basis from the past 20 years and stated them as a percentage of the original cost of the property retired.

106. Salvage values are stated as a percentage of original cost of the plant retired. This method is consistent with the methods of the prior depreciation studies and accepted industry practice. Also note that for Generation Plant, the salvage value determination relied more on other companies' experience.

107. The 2017 Depreciation Study used 20 years of recorded salvage and cost of removal experienced by the BLPC for T&D plant, and 15 years for General plant.

108. In the review of the average net salvage values for the various accounts in Exhibit D it was found that these values were within the typical range observed for other similar utilities in the USA. It was recognised that future net salvage had increased for some accounts, and others had declined. The ranges are summarised in Table 4 by plant type for both the 2017 and the 2009 study. The increases in net salvage seen was explained by the higher levels of future removal costs which are expected, and that needs to be included in the depreciation rates

for many of the distribution plant accounts. If more assets are retired on an annual basis in the future, cost of removal will increase and net salvage accruals can be expected to exceed current net salvage expenditures. The 2017 Depreciation Study used 20 years of recorded salvage and cost of removal experienced by the company for T&D plant, and 15 years for General plant. Salvage values were stated as a percent of original cost of the plant retired and this is a method consistent with accepted industry practice. As previously stated, for generation plant, the study relied on the net salvage of other companies' experience.

Table 5. Estimated Net Salvage in 2017 Depreciation Studies compared to Authorised Net Salvage as per the 2009 Decision

Plant Type	**Updated Net Salvage (2017 Study)**	**Net Salvage in 2009 (Range)**
Generation	[-12.5% to 0%]	[-13% to -2%]
T&D	Average: -4% [-14% to 0%]	Average: -7% [-20% to 0%]
General	[-5% to 8%]	[-5% to 16%]

109. The Applicant did not propose different net salvage rates in the 2019 Update compared to those proposed in the 2017 study.

110. The net salvage value approved in the 2009 Order is -5%. The net salvage value of -4.1% proposed by the Applicant in this proceeding reflects smaller negative values for each plant account category (with the exception of General Plant). A less negative weighted composite net salvage value represents lower costs of removal across all plant categories. For example, when asset lives are lengthened, positive salvage values decline or become negative as the physical item continues to deteriorate and the cost to dispose of that item increases. An example is the estimated LED street lighting ASL of 20 years and net salvage of -3.0% results in a recommended depreciation rate of 5.15%. The Applicant proposes a shorter life for legacy streetlights, which will be replaced by LED lights. This is consistent with the general trend in other utilities' practice in the USA. Based on this

assessment, the Commission finds the Applicant's proposed net salvage values fair and reasonable.

ADDITIONAL ISSUE RAISED BY INTERVENORS DURING THE DEPRECIATION HEARING

111. A number of additional issues were raised by the intervenors that have been addressed in this decision. Those mainly relate to the statement made in the Application[39] by the Applicant that if the Depreciation Policy requested was approved, then it would result in "*convergence of the depreciation policy used for regulatory purposes and setting electricity prices and that used for financial reporting purposes*". These issues are addressed in this section of this document.

Deferred Tax Liability

Intervenor's Position - MESBE

112. In paragraph 12 of the Final Submission Affidavit of Mr. Kury[40], he poses an example regarding occasions when there is a mismatch between the depreciation rates used for regulatory purposes and those used for tax purposes. He posits that "*an accrued or deferred income tax liability is created*". This would occur because the utility pays more or less in income taxes than it collects through consumer revenues, with the imbalance being "remediated" in the future through the course of standard regulatory process if tax rates and depreciation rates for regulatory processes remain unchanged.

BLPC's Position

113. In response to the final submission of the MESBE, Mr. Huck states that with reference to paragraph 11 of the Affidavit of Mr. Kury, the Applicant "*does not make any request of alignment of depreciation rates for regulatory and tax purposes*". In that same paragraph, Mr. Huck also notes that "*it is neither normal nor advisable for*

[39] Barbados Light & Power Company Limited 2019 "Application pursuant to Section 16 of the Utilities Regulations Act, Cap 282 for approval of the depreciation policy of the Barbados Light & Power Company Limited" April 30

[40] Kury, Theodore Joseph 2020 "Final Submission Affidavit" October 9

the alignment of depreciation rates for regulatory and tax purposes, given their very different purposes". He states therefore that the issues referred to by the intervenor are not relevant.

Commission's Findings

114. In paragraph 1 of the BLPC Application, the Applicant requested a Review of Depreciation Rates approved in 2009 "*to allow for the approval of a depreciation policy that results in a convergence of the depreciation policy used for regulatory purposes and setting electricity prices and that used for financial purposes*"[41]. Witness Kury's description of the deferred income tax liabilities arising from the differences between tax and regulatory depreciation is generally correct. Regulatory, or "book", depreciation life is generally longer than tax depreciation life, because in jurisdictions such as the US, the IRS allows accelerated depreciation for tax purposes during the earlier life of an asset,[42] thus creating an "allowance[43]" for tax depreciation. Normalisation of the differences between book and tax depreciation creates a reserve of deferred tax liability, as Witness Kury describes. However, Witness Kury's direction to the Commission to "*align the Applicant's depreciation rates for regulatory and tax purposes . . .*" is unsupported by precedent, because it is not a regulatory requirement. Although the book and tax depreciations would achieve parity at the asset end of life, there is no requirement that book and tax depreciation must match for any given year.

115. However, in a response to the Commission's March 12, 2021[44] interrogatory requesting clarification to the question of whether the Applicant is seeking to

[41] BLPC Depreciation Application

[42] Accelerated depreciation is the set of IRS rules that allow businesses to deduct from their taxable income the declining value of business-related investments, such as equipment and machinery, faster than the value of those assets actually declines. Accelerated Depreciation - Center for American Progress Accessed March 15, 2022

[43] Allowance is defined to be "anything in the internal revenue laws which has the effect of diminishing tax liability. The term includes, among other things, a deduction, a credit, an adjustment, an exemption, or an exclusion." *See, e.g.,* U.S. Internal Revenue Service Income Tax Regulations, 26 CFR § 1.269-1.

[44] Fair Trading Commission 2021 "Letter to the Barbados Light & Power Company Limited" March 12

align depreciation rates for regulatory and tax purposes, Ricaido Jennings in Exhibit RJ4 responded that that was not requested[45].

116. The Commission requires that the issue of the deferred tax liability be raised in the general Rate Review filing.

Cost Impact to Customers

Intervenor's Position - BREA

117. BREA inquired about the cost impact to consumers due to delays in retiring certain steam units. Although this intervenor expressed concerns and queried the Applicant on the cost impact to consumers due to delays in certain retirements, it communicated in its correspondence[46] that it supported the Application, and expressed no concern as to the quality of the responses to their inquiry. BREA did not provide any Affidavit to enter into record of this proceeding.

BLPC's Position

118. The BLPC rationalised the extension of the life of the steam units as a result of declining demand, economic conditions and policy changes. Futhermore, the Applicant's decision to retire the steam plant on the commissioning of one sizeable project that was supposed to come on stream in 2018, namely the construction of a biomass and waste-to-energy plant was set back when the project never materialised. Further with the advent of policy changes (the BNEP 2030), meant that it was necessary to continue to keep the steam units in operation. The BLPC states that "*it was the Company's intention to retire the steam units in 2012, the impending expiration of the utility's licence in 2028 created uncertainty regarding future long-term investments. In addition, the government signaled its intent to install up to 60MW of waste-to-energy and biomass plant by 2018.*

[45] Jennings, Ricaido 2021 "Supplemental Affidavit" March 26

[46] Barbados Renewable Energy Association 2020 "Letter to Fair Trading Commission from BREA Re: Application of the Barbados Light and Power Company Limited to the Fair Trading Commission for Approval of its Depreciation Policy – File No. FTCUR-OV20" July 3

These factors caused the Company to delay retirement of the steam units until the government's intended projects were commissioned[47]."

Commission's Response

119. The Commission acknowledges the concerns of the Intervenor and the Applicant's rationale of their decision. The Commission was made aware of the government's intention to install the waste-to-energy and biomass plants. Additionally, policy changes by the government in the form of the development of the BNEP 2019-2030 by the Ministry of Energy was part of the considerations of the BLPC in its decision making.

120. Given the transition that the electricity market has been seeing over the period 2010 to present, a decision to retire steam units and replace them by other fossil fuel plant could potentially result in the creation of stranded assets, that is, assets that are still used and useful, but that need to be retired earlier than at the end of their useful life. In that the assets would have been determined to be prudently incurred, the recovery of those costs would still need to be borne by the Barbados consumer and therefore will result in increased cost to the consumer.

For this reason, the Commission therefore recognised the conclusion by the Applicant to defer its decision to remove aged infrastructure from generation as a reasonable one.

[47] Seale, Rohan Affidavit RS1 The Barbados Light and Power Company Limited Asset Lives – Technical Information April 30, 2019

SECTION 4 – DETERMINATION

121. Based on the evidence presented by the Applicant in its Application, evidence submitted by the intervenors, along with the Commission's own investigations and analysis, the Commission determines that the methods examined herein, which were applied in the Applicant's Depreciation Study, are reasonable and consistent with generally accepted techniques in the industry. Specifically, the use of the straight-line method remaining life technique, and the method used to determine the depreciation of asset lives. Additionally, the Commission considers that the proposed use of the revised service lives and salvage values as calculated in the Applicant's 2017 Depreciation Study are reasonable. Those issues raised by the Intervenors (deferred income taxes and the Cost Impact to Customers), fall outside of the scope of the Hearing.

122. Based on the analysis of the Application submitted, the Commission finds that the straight-line remaining life technique achieves the objectives of the Depreciation Study of providing rates that are efficient, give intergenerational equity and provide ease and are replicable, thereby providing protection to the consumer, taking the needs of the utility into account. With respect to the determination of depreciation rates for generation plant, the Commission re-states that there must be sufficient support for the determination of said rates.

123. The Commission recognises that it is important to ensure convergence between the depreciation policy used for financial reporting and for regulatory purposes. Without prejudgment of the issue, this will be addressed in the upcoming Rate Review. Additionally, issues such as the potential over-recovery of rates since the last rate application in 2009 will also be addressed. In this instance, the Commission is satisfied with the methods used to estimate the net salvage. In the instant Application the Commission accepts the Applicant's "SPR notes" as demonstrative of supported judgment in place of mathematical analyses, insofar as the Applicant's proposed T & D and General Plant rates appear to be fair and reasonable *prima facie*, and the Intervenors proposed no alternative rates in

rebuttal. However, the Commission cautions the Applicant that it bears the burden of proof in demonstrating that its wholesale use of judgment in place of quantifiable mathematical analyses in estimating asset service lives is sound, and must provide significant rationale whenever such judgment deviates significantly from a more empirical methodology.

124. The Commission makes the following determinations:

a) The methodologies used by the Applicant, that is the straight-line method and remaining life techniques, in the determination of the asset lives of T&D and General Plant are appropriate and thus approved.

b) The Net Salvage Rates as determined by the Applicant for T&D and General Plant are considered justifiable and verifiable and are therefore approved.

c) The Commission further approves the T & D rates and the General Plant rates derived from asset service lives calculated in the 2017 Depreciation Study, adjusted for December 31, 2019 as follows in Table 2.

Table 6 Depreciation Rates by Plant Type

Plant Type	2019 Update Depreciation Rates
T&D	3.10%
General	4.09%

Based on the information provided by the Applicant, the Commission does not approve the depreciation rates requested for Generation Plant.

Table 7 Depreciation Rates by Plant Type

Plant Type	2019 Update Depreciation Rates
Generation	3.52%

d) The depreciation rates approved herein will become effective concurrent with the rates to be approved on the effective date ordered in the ongoing Rate Review.

Dated this 25th day of March, 2022

Original Signed by
……
Tammy Bryan
Chairman

Original Signed by
……..
John Griffith
Commissioner

Original Signed by
……..
Ruan Martinez
Commissioner

Original Signed by
……..
Simon Naitram
Commissioner

Original Signed by
……..
Samuel Wallerson
Commissioner