REGULATED INDUSTRIES COMMISSION

Approach to Setting Operating Expenditure for Price Reviews

March 2022

This document examines the RIC's approach to setting operating expenditure for the Trinidad & Tobago Electricity Commission for the second regulatory control period.

Consultative Document

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1.0 BACKGROUND

The Regulated Industries Commission (RIC) is responsible for setting price limits for the electricity transmission and distribution sector and does so within a regulatory framework that is governed by the RIC Act. As the economic regulator, the RIC's mandate includes ensuring that quality services are provided to customers at the most efficient costs.

During the first regulatory control period[1] (PRE1) the RIC adopted an incentive regulation or RPI-X framework for establishing price controls. Embedded in this RPI-X regulation framework is the building-block approach, which essentially involves the development of revenue forecasts for T&TEC, based on four major components: efficient levels of operating expenditure (Opex), capital expenditure (Capex) that an efficient utility would require, depreciation and return on the asset base. At the end of that process final tariffs are established to achieve the forecast revenue requirements.

Opex accounts for a significant portion of a utility's total costs and therefore, can have a notable impact on the final bills paid by customers. Consequently, the appropriate level of Opex to be allowed into the revenue requirement is critical, and requires close scrutiny of the utility's management of these costs and its projections for the forthcoming regulatory control period.

1.1 Purpose of the Document

The paper discusses the RIC's proposed approach/measures to assessing operating expenditure for the second regulatory control period for the electricity transmission and distribution sector and invites feedback from stakeholders. The RIC's approach for the first regulatory period (2006-2011) is provided as a backdrop to provide context for our proposed approach.

[1] The RIC determined electricity rates for the first regulatory control period 2006-2011 (PRE1).

1.2 Structure of document

The remainder of this document is structured as follows:

- **Section 2 –** introduces of key concepts that form the basis of the "building blocks" approach and the need to examine Opex;
- **Section 3** – outlines the RIC's approach to setting Opex, as used in PRE1;
- **Section 4** – reviews RIC's proposed Opex against T&TEC's actual Opex, for the first control period;
- **Section 5**– highlights challenges in assessing Opex and how they may be addressed going forward with respect to the rate review for T&TEC; and
- **Section 6** – Conclusion.

1.3 Responding to this Document

In keeping with the RIC's obligation to consult, stakeholders are invited to comment on this document.

All persons wishing to comment are invited to submit their responses, in writing, by **4:00pm on April 15, 2022** to:

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Regulated Industries Commission
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Port-of-Spain, Trinidad

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Tel. : 1(868) 625-5384; 627-7820; 627-0821; 627-0503
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Email : ricconsultation@ric.org.tt or comments@ric.org.tt
Website : www.ric.org.tt

Copies of this document are available from the RIC Information Centre or from our website. All responses will normally be published on the RIC's website unless there are good reasons why they must remain confidential. Any requests for confidentiality must be indicated.

2.0 INTRODUCTION

The Regulated Industries Commission (RIC) Act No. 26 of 1998 established the RIC as the economic regulator of the electricity transmission and distribution sector in Trinidad and Tobago. Section (6)(1)(c) of the Act, imposes a duty on the RIC "*to ensure, as far as is reasonably practicable, that the service provided by a service provider operating under prudent and efficient management will be on terms that will allow the service provider to earn sufficient return to finance necessary investment*". Additionally, Section (6)(3)(a) requires the RIC to consider, "*maximum efficiency in the use and allocation of resources to ensure as far as is reasonably practicable, that services are reliable and provided at the lowest possible cost*".

The RIC must also have regard to:

- *The ability of consumers to pay rates - Section (67)(3)(c); and,*
- *The replacement capital cost expended, least-cost operating expenses which may be incurred, annual depreciation, return on the rate base; Section (67)(4)(a) – (d).*

The legal framework provides the basis upon which the RIC establishes tariffs that are expected to recover T&TEC's efficient costs of providing service. This is done by considering components or "building blocks" of the revenue requirement, one of which is operating expenditure (Opex). In its determination of the efficient level of Opex that T&TEC was allowed to recover through tariffs for PRE1, the RIC gave careful consideration to the ability of T&TEC to fund its operational activities as well as to the needs of customers in terms of required service levels, and their ability to pay for such services. In the process of establishing efficient Opex, the RIC made a number of assumptions and decisions regarding the associated expenditure items.

In December 2020 the RIC initiated a price review for the second regulatory control period for 2021-2026 (PRE2). To that end, the RIC must examine the effectiveness of its regulatory approach and the consequent relevance and applicability of continuing along that path. In so doing, the RIC will consider whether any changes to the approach taken in PRE 1 are necessary and propose these for consultation.

3.0 RIC'S APPROACH TO ASSESSING OPEX (PRE1)

Operating expenditure (Opex) is the day-to-day costs of running the utility and typically include cost for generation, fuel, repairs and maintenance, staffing and overhead costs. These costs amount to approximately 90% of the overall revenue requirement, which is derived through various cost components or "building blocks", generally given by the following equation.

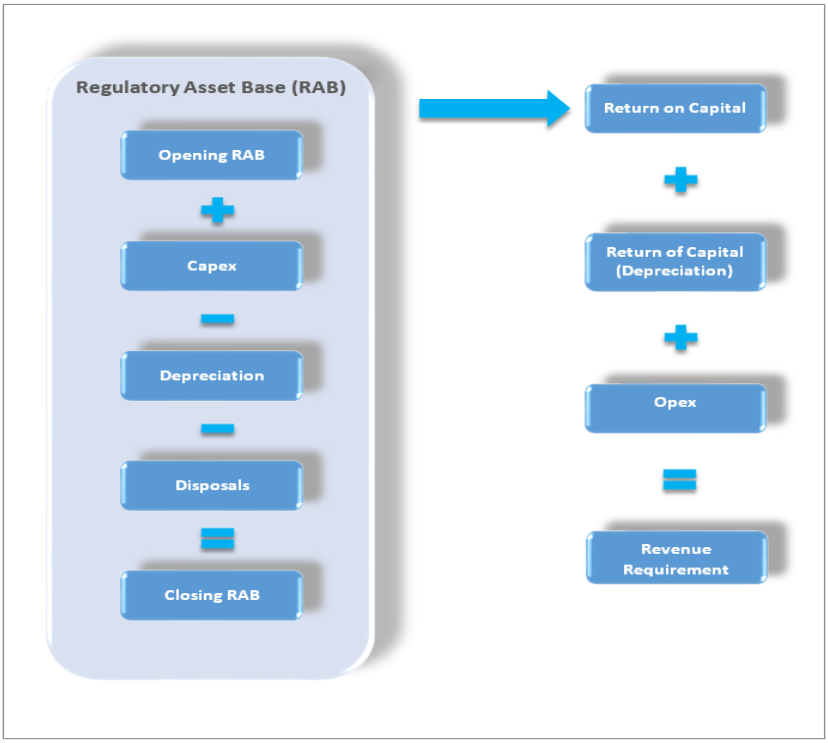
Rev = (WACC x RAB) + Dep + Efficient Opex

Where:

- *Rev is the allowed revenue requirement*
- *WACC is the weighted average cost of capital*
- *RAB is the regulatory asset base*
- *WACC x RAB establishes the return on capital allowed over the same period*
- *Dep is regulatory depreciation*
- *Efficient Opex is the expected efficient operating expenditure*

The general relationship between these components is summarized in figure 1 below.

Figure 1: Building Block Approach to Revenue Requirement



The overall objective of assessing the service provider's Opex projections is to determine whether the proposed Opex is necessary and efficient, and therefore, to be funded by tariffs. Generally, one of the first steps in the RIC's approach involves categorizing costs as either "controllable" or "uncontrollable" costs. The former are those costs which the utility has the ability to exercise some level of control over, such as advertising, overtime, etc. The latter represent costs that are largely determined by mechanisms outside of the purview of the service provider, over which management has little or absolutely no control. These costs can include license fees, fuel costs or obligations/payments under Power Purchase Agreements (PPAs). Such costs are deemed to be "uncontrollable" and are usually passed directly to the overall efficient level of Opex that has been determined.

The allowance for Opex is usually assessed by reference to a range of different sources of evidence including: historical performance of the service provider; the service provider's own Opex projections; various types of benchmarking[2] exercises (internal, process or international); and evidence as to what efficiencies have been achieved in other utilities. Additionally, the nature of incentive-based regulation, where the service provider is permitted to retain the benefits of out-performance (or suffer the consequence of under-performance) against the allowances, means that significant weight will usually be placed on the most recent actual performance of the service provider. Also, as demand grows, the nature of the service provided may change, new opportunities for efficiencies may arise and new capital investments may be required[3]. Therefore, new factors may influence the appropriate allowances for operating costs.

[2] Benchmarking for the purposes of regulation consists of two main elements:

- The "measurement" side of benchmarking (performance benchmarking). This aspect concentrates on measurement and comparison within organizations and within industry by the use of techniques such as performance indicators, modelling and outcome measures; and
- The "action" side of benchmarking (process benchmarking). It deals with understanding current processes, comparing to "best in class" and changing the way things are done.

Performance benchmarking is important for identifying whether a utility is efficient compared with others and is useful to compare the performance of the utility over time. Process benchmarking allows for comparison of policies, procedures and processes which allows for the identification of strategies for improving efficiency within a utility.

[3] New capital investments, such as improvements in technology for increased efficiency, may also be required. The RIC's approach to capital expenditure is discussed in the paper "Approach to Assessing Capital Expenditure for Price Reviews".

Most regulators utilize a broadly similar approach to setting Opex, based on reviewing historical expenditure and considering whether future activities justify an increase in expenditure. The objective for the regulator is to understand what represents a reasonable allowance for operating costs, which is usually a level of costs that can realistically be expected to be incurred if the entity is run efficiently within the constraints it faces. The service provider is usually incentivised to reduce costs by being allowed to keep any underspend (or bearing the risk for any overspend) for a limited time period.

In assessing controllable Opex, the RIC utilized the following processes/steps:

- Determining the baseline operating costs;
- Reducing baseline costs through efficiencies; and
- Specifying a generalized efficiency factor for the reduction of forecast (allowed) costs for future "unidentified" efficiencies.

The RIC also included an efficiency carryover mechanism for Opex to incentivise T&TEC to reduce its Opex costs over the price control period.

3.1Baseline Opex

The assessment of Opex begins with an in-depth assessment of the service provider's reported actual expenditure, as provided in its audited financial statements, in a base year (the base year for the price review, that is, the starting point for setting forward allowances). The baseline should reflect the normal operating costs of the service provider; from which it is possible to assess the impact of future cost changes. Consequently, one-off costs and savings that are considered to be atypical of the service provider's normal Opex are removed. In the case of T&TEC, the assessed baseline also excludes generation and fuel costs, as these are uncontrollable costs, based on contractual arrangements, and as such cannot be influenced by T&TEC. The assessment at this stage does not take into consideration future improvements in efficiency, as this is considered separately.

The RIC's assessment of the normalized baseline costs focuses on the breakdown of Opex into categories (the "bottom-up" approach). This is undertaken by analyzing expenditure by function, that is, the cost to provide a particular service, and by activity, that is, the cost of each activity comprising a service. The service provider is required to provide justification for its expenditure in

these cost categories. The costs for meeting new demand from customers and for the effects of annual inflation are also allowed. The RIC also identifies particular significant cost items that warrant a more detailed review and further investigates these. The assessment process also considers the extent to which the initial results should be adjusted to take account of any special factors that may have been relevant to T&TEC at that time.

3.2 Assessed Scope for Efficiencies

The RIC also considers wider information and identifies specific cost items where comparison with other utilities (the "top-down" approach) would be useful. For instance, T&TEC's overtime expenditure, absenteeism rate, etc. were benchmarked against "best practice" targets. Benchmarking requires careful interpretation, accurate information, and like-for-like comparisons and consequently the RIC recognized circumstances where it was appropriate to adjust results to account for local factors in the comparisons. As indicated above, the RIC also distinguished costs that the utility's management could influence or control, from those that are driven purely by external factors. The RIC also set prescriptive annual targets for cost reduction for a limited number of cost items (e.g. heat rate), given the limitations of benchmarking.

3.3 Specification of Generalized Efficiency Factor

The RIC utilized a generalized efficiency factor of 2.8% per year to reflect the efficiencies T&TEC was expected to achieve in the costs associated with providing a service. The RIC also utilized the "rate of change" as one of the techniques for arriving at an "efficient" level of Opex for the first regulatory control period. The rate of change is the year-to-year change in Opex for a number of factors such as, expected productivity improvements in labour and other costs. The rate was established by examining the productivity achieved by T&TEC in Opex retrospectively and thereafter, calculating future cost reductions on the assumption that the same rate of change (i.e. productivity improvement) will continue in the future.

3.4 Efficiency Carryover Mechanism

A tenet of the incentive-based approach is to reward good performance. An efficiency carryover mechanism is the means by which the incentive for a service provider to make efficiency gains is enhanced by permitting it to carry over gains from one regulatory period to the next. Customers benefit from lower prices when efficiency gains are passed to them at the end of the period. In this

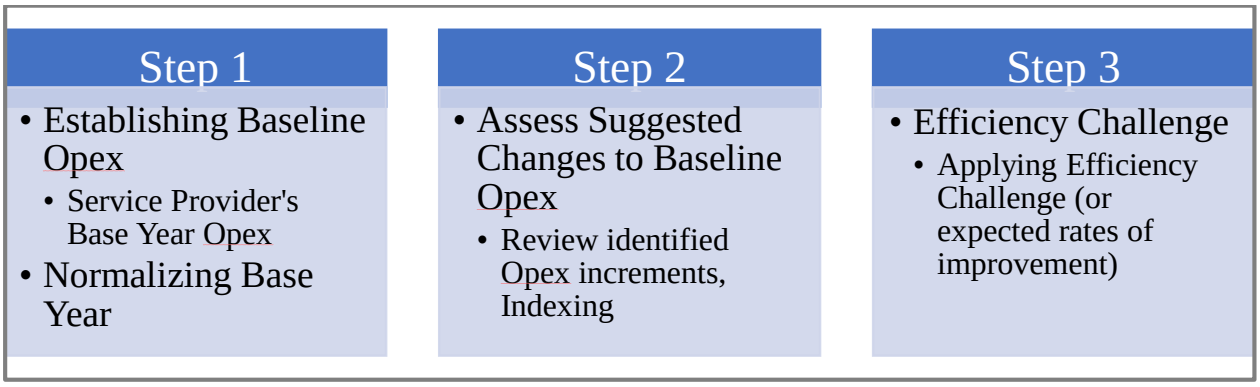
regard, the RIC implemented a five-year rolling efficiency carryover mechanism for Opex, in order to further supplement incentives for achieving efficiencies within the regulatory control period.

In summary, the analysis to determine the level of efficient Opex to be recovered by tariffs comprised:

- Examining T&TEC's historical Opex and Opex profile (1999 – 2004), identifying trends and removing any non-recurrent or one-off type costs in the process;
- Comparing T&TEC's forecast Opex against its historical Opex (1999 – 2004);
- Collating and examining data from other electricity utilities in order to compare particular measures with T&TEC's proposed Opex, in order to establish a reasonable profile;
- Considering a number of scenarios that were relevant to determine and account for any level of future changes to be considered in establishing the efficient level of Opex;
- Reviewing T&TEC's potential to improve efficiency, thereby arriving at efficiency savings to be applied to the allowed Opex; and
- Establishing the overall allowed efficient level of Opex based on all of the above considerations, and the inclusion of uncontrollable Opex, namely T&TEC's generation (fuel and conversion) costs.

The steps to assessing Opex and establishing the allowed level of efficient Opex are summarized in figure 2 below.

Figure 2: RIC's Approach to Determining Efficient Opex



Utilizing the process and approach outlined above, the RIC reduced T&TEC's proposed Opex by $905.74 million in its determination of efficient Opex in PRE1 and made a number of adjustments, some of which included the following:

- **Employee Costs** – Given the review of data for the period, 1999 – 2004, and subsequent submissions for 2005, the RIC increased Employee costs by 10.6%[4] over T&TEC's 2004 costs, for the first year of the control period (2006), and thereafter applied even increases of 5% per annum to account for any new bargaining agreements, etc. Notwithstanding, the RIC reduced T&TEC's proposed Employee costs by $124 million overall.

- **Administration and General Expenses** – The RIC allowed 82.5% of T&TEC's proposed costs in this category. Overall, $10.9 million was disallowed for promotions/promotional activity. The RIC also made provisions for Cess payments, provided $200,000 per annum for payments towards breaches of the Guaranteed Electricity Standards[5], and removed one-off expenditure items from the base year Opex.

- **Repairs and Maintenance** – These costs were adjusted to keep in line with internationally accepted best practice. The RIC allowed a figure that represented 1.5% of gross fixed Transmission assets and 2.5% of gross fixed Distribution assets.

- **Conversion and Fuel Costs** – Given revised energy forecasts submitted by T&TEC, the RIC allowed over 96% of conversion costs. In order to provide appropriate incentives to move towards combined cycle plants and save on fuel costs, over 85% of proposed fuel cost was allowed.

- **Efficiency Savings** – On the basis of an analysis of productivity changes in Opex for T&TEC over the period, 1999 – 2003, the RIC included a non-compounding efficiency factor of 2.8% per annum, thereby reducing Opex, and Transmission and Distribution Costs, in particular, by $53.3 million overall.

[4] This was consistent with the compound annual growth rate (CAGR), calculated for data submitted by T&TEC for the period 1999 – 2005.

[5] Guaranteed Standards set service levels that must be met for each customer by the service provider. Under these standards, the utility is required to make compensatory payments to the affected customers if it fails to provide the level of service stipulated.

4.0 OPEX OUTTURN

As indicated in the previous section, the RIC challenged T&TEC to provide value for money in PRE1, by requiring it to improve its operating efficiency and reduce its Opex by $905.74 million from what it had proposed in its Business Plan (a reduction of 8.04%). This efficiency challenge would have reduced annual expenditure by about $181.15 million by the end of the control period compared with the levels that would have prevailed had there been no regulatory efficiency challenge.

Unlike Capex, ex-post treatment of Opex is not a feature of most regulatory regimes. Where regulators use ex-post assessment of Opex, it is generally to inform the setting of Opex allowances for the next price control period rather than to claw back inefficient expenditure from the previous price review. However, a brief assessment of the first price control period is presented below.

A comparison of T&TEC's actual Opex to what the RIC allowed for PRE1, is shown in table 1 and figure 3, below. T&TEC incurred operating expenditure that was higher than that allowed by the RIC, in all but the final year of the control period. Overall, T&TEC's outturn surpassed the RIC's allowed Opex by 5.6%, in nominal terms. Additionally, the RIC's allowed Opex profile provided for a gradual and cumulative increase in such expenditures to a maximum of 45.75% over that of 2006, by the end of the control period. However, in actuality, T&TEC's Opex peaked in the period June 2009 – May 2010, at a maximum of 51% above the allowed 2006 Opex, thereafter falling slightly in the final year.

Table 1 shows the analysis of Opex, for the period June 2006 – May 2011 according to the major line items: Conversion; Fuel; Labour; Transmission and Distribution (T&D) Repair, Maintenance and Other T&D Expenses; and Administration and General. According to this data, actual expenditure was $601.67 million more than approved.

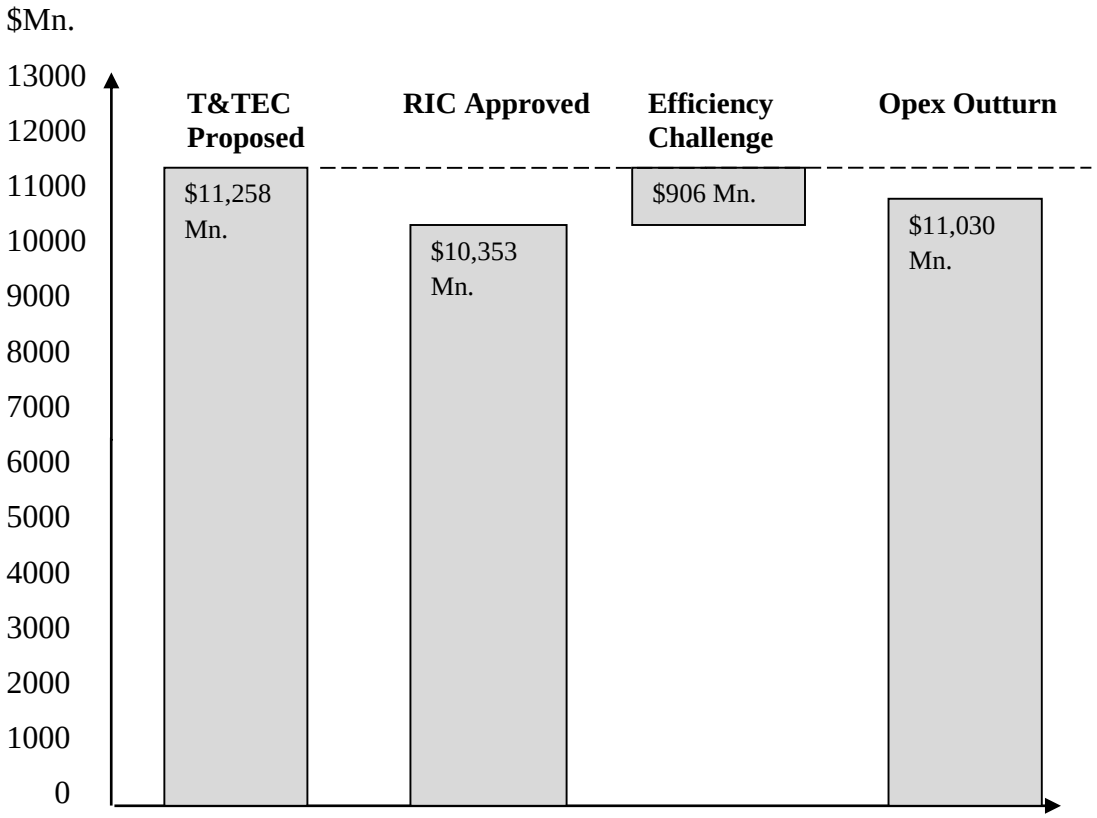
Table 1: Analysis of 2006-2011 Actual Opex by Major Categories

Opex Item	June 2006 - May 2007 (TT$ Mn)	June 2007 - May 2008 (TT$ Mn)	June 2008 - May 2009 (TT$ Mn)	June 2009 - May 2010 (TT$ Mn)	June 2010 - May 2011 (TT$ Mn)	Total (TT$ Mn)	Difference Actual - Approved	Approved from Actual as a Percentage of Actual[6]
Conversion:								
RIC Approved	792.66	844.08	1,050.27	1192.87	1391.51	5,271.39		
T&TEC Actual	807.85	932.06	942.38	943.05	878.69	4,504.03	-767.36	-17.04%
Fuel:								
RIC Approved	584.1	609.4	651	671.5	716	3,232.00		
T&TEC Actual	557.34	583.52	635.94	725.34	732.91	3,309.08	3.05	0.09%
Labour:								
RIC Approved	273.61	287.3	301.65	316.72	332.54	1511.82		
T&TEC Actual	337.44	355.4	363.65	494.62	528.36	2079.47	567.65	27.30%
T&D Repair, Maintenance and Other T&D Expenses:								
RIC Approved	233.83	245.49	257.53	270.43	280.97	1288.25		
T&TEC Actual	254.18	264.42	314.87	493.33	404.69	1731.49	443.24	25.60%
Administration & General:								
RIC Approved	134.35	137.91	140.71	144.24	147.38	704.59	--	--
T&TEC Actual	172.53	449.99	223.47	186.22	310.39	1,053.01	638.02	47.52%

Notes to Table:
Expenditure associated with T&D Repair Maintenance and Other T&D Expenses as well as Administrative and General Expenses, includes Personnel Costs which have also been included in the Labour line item.

[6] These percentages measure the difference between what the RIC approved against T&TEC actual spend, that is, [(Actual Opex-RIC Approved) x 100] / Actual Opex.

Figure 3: RIC's Efficiency Challenge for 2006-2011 Opex



First Control Period, 2006-2011[7]

In the RIC's assessment of T&TEC's conversion and fuel costs, which were largely treated as uncontrollable, adjustments were made to first reflect cost "pass-throughs" of 98% and 90% respectively, and a small additional reduction was then applied. The realisation of significantly lower costs in terms of conversion, but slightly higher costs with respect to fuel may be attributed to uncontrollable factors.

Employee costs, which comprise wages, salaries and employee benefits, were $567.65 million above forecast. More specifically, whilst T&TEC spent more in each year on labour than was approved, the increase over the approved amount doubled between the 2008/2009 and 2009/2010 period. The sharp increase is attributed to increased salaries for management as a result of job evaluation exercises and the payment of back-pay associated therewith in 2009. There were similar

[7] Depreciation is not included in these figures as it is an accounting concept that the regulator would not be able to challenge the utility to make "more efficient".

payments to employees following new collective bargaining agreements, signed in December 2008. This also accounted, in some measure, for the higher than approved Transmission and Distribution costs and Administration and General Expenses. In addition, the extension of the 1994 T&TEC-PowerGen Power Purchase Agreement, the treatment of depreciation under IAS17[8] and the repair of the damaged submarine cable between Trinidad and Tobago, contributed to T&D, and Administration and General Expenses being above RIC approved amounts.

The increased expenditure may also be explained, in part, by T&TEC's accounting treatment for its "Retirement Benefit Obligation". At the time of the review, T&TEC had not yet adopted the December 2004 amendment to IAS 19[9], which provided for the option of recognising actuarial gains and losses in full, in the period in which they occur, outside profit or loss, in a statement of recognised income and expense. T&TEC adopted this amended standard during the control period, therefore, such expenditures were not catered for in the original Opex projections submitted for the 2006 Price Review. Additionally, T&TEC indicated that this figure was difficult to predict, and can either be an addition to expenditure or 'reduction', but is always recorded on the expenditure side of the Income Statement. For the years 2006 – 2008/09, this item was reported as $289.6 million (expenditure), $56.03 million (expenditure), and $44.6 million (gain), respectively, giving a net addition to expenditure of $301.03 million. No data were available for the period 2009/10. Apart from pensions, T&TEC suggested that increases in this category have also resulted from the need to undertake urgent and critical maintenance work or from price increases since the release of the Final Determination.

[8] International Accounting Standard 17 (IAS17) – Leases.
[9] International Accounting Standard 19 (IAS19) – Employee Benefits.

4.1 Lag Period (2012-2019)[10]

PRE1 ended on May 31, 2011 and hitherto the RIC has not completed a second determination hence there was no approval of Opex for the period that followed (lag period). Notwithstanding, there is value in reviewing T&TEC's Opex over the lag period (2012-2019), to analyze trends in the various expenditure categories and make comparisons with T&TEC's actual Opex during PRE1. This analysis will give an indication of how well T&TEC managed its Opex without specific efficiency targets set by the regulator. It should be noted that PRE1 covered a five-year period while the lag period covered an eight-year period.

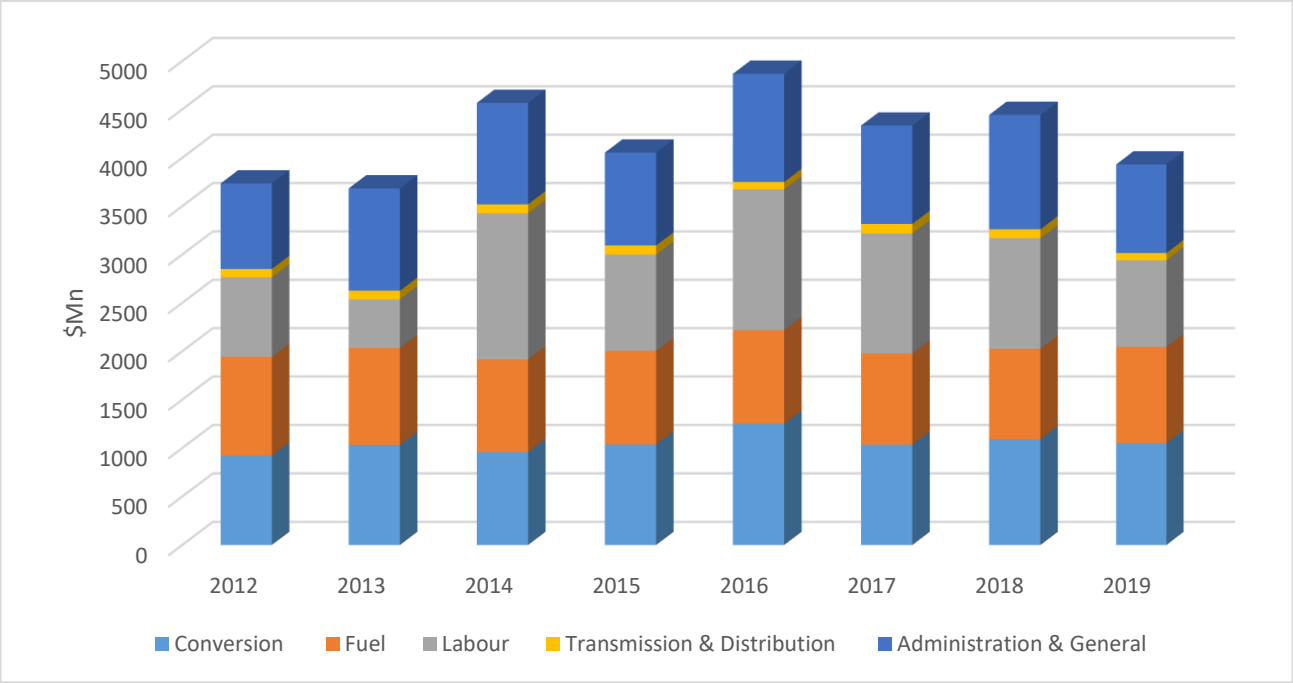
T&TEC's total operating expenditure over the period January 2012-December 2019 amounted to approximately $33Bn. As shown in table 2, Total Opex was $3.74Bn in 2012, peaked at $4.87 Bn in 2016 and declined to $3.93Bn in 2019, representing an overall increase of 5.2% over the period 2012-2019. The composition of the costs is shown in figure 4.

Table 2: Actual Opex by Major Categories, 2012-2019

	2012 $Mn	**2013 $Mn**	**2014 $Mn**	**2015 $Mn**	**2016 $Mn**	**2017 $Mn**	**2018 $Mn**	**2019 $Mn**
Conversion	922.92	1,033.12	959.53	1,038.35	1,251.67	1,036.87	1,093.21	1,051.35
Fuel	1,020.55	1,000.26	956.55	967.21	967.14	938.63	933.70	995.58
Labour	821.03	504.42	1,509.63	994.24	1,454.96	1,241.59	1,141.56	893.52
Transmission & Distribution	87.23	88.86	93.56	94.28	77.19	98.85	92.80	75.49
Administration & General	883.69	1,057.46	1,048.57	960.60	1,118.68	1,018.00	1,183.07	915.42
Total	**3,735.42**	**3,684.12**	**4,567.84**	**4,054.68**	**4,869.64**	**4,333.94**	**4,444.34**	**3,931.39**

[10] At the time this report was being prepared, finalized figures for all Opex categories for 2020 were not available, therefore, the lag period was assessed up to 2019.

Figure 4: Changes in the Composition of Opex 2012-2019



Conversion costs[11] increased by 13.9% over the period 2012-2019. During the period 2012-2015, these costs ranged between $922Mn and $1,051Mn, fluctuating by $100Mn. annually. In 2016, conversion costs increased to a peak of $1,251Mn, then fluctuated between $1,036Mn. and $1,093Mn between 2017 and 2019.

Fuel costs were relatively stable over the period with an overall decrease of 2.4% over the period. There was a reduction of 4.4% from 2013 to 2014, falling from $1,000Mn to $957Mn., due to the switch from diesel fuel to natural gas in Tobago. In 2019 there was an increase of 6.6% over the previous year, associated with the use of less efficient generating plants, as one of the combined cycles plants was out of service for a period of time. T&TEC's conversion and fuel costs, together

[11] The accounting standard IFRS 16- Leases, which affects how lease agreements are treated in financial statements, was implemented in 2019 by T&TEC. Previously, leases were treated as either finance or operating leases. Finance leases were recognised as assets on the lessees' statement of financial position (balance sheet) and operating leases were not. This distinction has been removed and the vast majority of leases are to be classified as finance leases. This has implications for depreciation and the asset base, however, for the purposes of this paper these costs have been normalised. As a consequence, the adoption of the standard conversion costs falls into the category of "PPA Costs".

accounted for approximately 48.1% of the utility's operating expenses during the lag period as shown in figure 4.

Labour costs fluctuated throughout the period. From 2012 to 2013 there was a decrease from $821Mn to $504Mn (a change of 61.4%) due to pension adjustments in accordance with suggestions made by the actuaries. This was followed by a significant increase in 2014 of 299% moving these costs to $1.51 Bn. Over the next two years these costs fluctuated, decreasing by 65.9% in 2015 followed by an increase in 2016 of 46.3%. This was followed by a consistent decline from 2017-2019, eventually settling at $893.52Mn. These fluctuations were mainly due to the payment of salary arrears with the consequent year-end adjustments to the pension plan increasing in the years that the arrears are paid and thereafter returning to more normal levels. Labour costs accounted for approximately 25.5% of the utility's operating expenses during the lag period as shown in figure 4.

Transmission & Distribution costs decreased overall during the period 2012 to 2019. In 2012, T&D costs were $87.23Mn, and increased steadily up to $94.28Mn in 2015. Thereafter, T&D costs fluctuated, as there was an 18.1% decline in 2016 to $77.19Mn, a 28% increase to $98.85Mn in 2017, eventually declining to $75.49Mn in 2019. The decline in 2019 was due mainly to the decrease in tree cutting contracted services. Transmission & Distribution costs accounted for approximately 2.1% of the utility's operating expenses during the lag period as shown in figure 4.

Administration & General costs fluctuated but evidenced an overall increase during the period 2012 to 2019. These costs increased by 19.7% in 2013 to $1,057.5Mn, and decreased by 8.4% to $960.6Mn in 2015, followed by an increase of 16.5% to $1.118Bn in 2016. By 2019 these costs had decreased to $915.42Mn. The fluctuations observed over the period occurred primarily due to reclassification of expenses between T&D and Administration and General. Administration & General costs accounted for approximately 24.3% of the utility's operating expenses during the lag period as shown in figure 4.

5.0 PROPOSALS FOR THE SECOND REGULATORY CONTROL PERIOD

The analysis of T&TEC's Opex performance for the first regulatory period suggests that no concerted efforts were made by T&TEC to undertake efficiency improvements. However, there were also some occurrences during the control period that affected T&TEC's outturn as compared with allowed Opex levels, that were undoubtedly unforeseeable and therefore, outside of the control of the utility. Notwithstanding this, RIC was able to ensure, through its efforts that certain efficiencies were passed up-front to customers by disallowing certain expenditure into the revenue requirement.

The RIC intends to continue to utilize the combination of approaches and techniques identified in Section 3 for the second regulatory control period as these methods remain well accepted in a regulatory environment. The RIC is mindful that there must be elements of regulatory judgement in the process. Further, the RIC is cognisant of the following:

- Allowed revenue must offer a reasonable prospect for T&TEC to recover its efficient costs (including a reasonable rate of return). The risk of not doing so entails incentives for efficient expenditure and investment being undermined;
- The high proportion of costs that are sunk or uncontrollable, limits the scope for cost reduction. However, the RIC has an obligation to ensure that costs that are demonstrably inefficient or unnecessary are not allowed while at the same time, make an allowance for any additional costs arising out of new obligations.
- Estimating efficient costs purely on the basis of benchmarking is not possible given the practical problems of finding good comparators, as electricity utilities differ in size, structure and may face a variety of external operating environment factors.

Several important issues, worthy of consideration, will be discussed in the following sub-sections.

5.1 Role of Incentives for High Performing State-Owned Utilities

Regulators generally seek to create an environment that provides incentives to utilities to perform efficiently. However, regulators have experienced challenges with implementing such incentives in sectors where the utilities are state-owned. It is generally argued that the regulatory instruments can easily become blunted under state-ownership. Consequently, management is less incentivised because the penalties for failure are minimal, and there is no real threat of bankruptcy as even a poor performing utility can expect to be "bailed out" by the State.

While recognizing that the desired effect of utilizing incentives may not be as strong as in the case of private utilities, the RIC proposes to supplement incentive-based regulation with provisions that require the service provider/management to include management incentives. For State-owned entities, where the profit motive is absent, management is likely to be more focused on achieving outputs as this will have a direct impact on the reputation of the entity and its senior management. The RIC will continue to focus on the utility's achievement of outputs/outcomes to ensure that the utility's management is subject to strong reputational incentives for good performance. In this regard, some of the measures will include:

- **naming and shaming (e.g. poor performance is reported in the media) less commonly referred to as sunshine regulation.**
- **stricter cost management through management of actual cost savings against target levels; and**
- **regular and more frequent publication of regulatory accounts in accordance with the regulatory accounting guidelines established by the RIC.**

The RIC strongly advocates that Government gives consideration to implementing Management Incentive Plans (MIP), such as, bonuses for improved performance, performance related pay, etc., that set out the types of incentives that should apply to management to align their incentives with the regulatory regime established by the RIC. In fact, increasingly, it is becoming either a statutory

requirement or an element of the operating licences for State-owned entities to develop and maintain MIPs[12].

In addition to the incentives provided to management through MIPs, consideration needs to be given to the ownership structure of the entity as this can have a bearing on the extent to which managers are incentivised to achieve set targets. Strengthening the governance regimes to better align the incentives of the Board and managers, with clear service quality and financial performance objectives, may be even more critical to the improvement of performance.

5.2 Design of Incentives

The importance of good quality information cannot be overemphasized in terms of improving the regulator's ability to conduct an effective review of the utility's forecasts. This is especially applicable to T&TEC's data submissions on historically-incurred costs, as well as forecast future costs and the business cases that underlie the forecasts. In this context, "good quality" may encompass providing accurate time-series data, sufficient detail (costs allocated to a number of individual projects or programs), maintaining consistency of definitions over time and where changes are made, clearly identifying same and the resultant impacts, and finally, ensuring the provision of up-to-date audited financial data[13]. In this regard, the RIC will consider including an incentive mechanism geared towards high quality information[14]. The general concept is to encourage T&TEC to submit a business plan that reflects the best available information about future efficient expenditure requirements. In doing so, the utility may or may not receive a financial reward or penalty depending on their forecast relative to the regulator's assessment of efficient expenditure. Better forecasts from the utility relative to the regulator's, increase the likelihood of a positive outlook for the efficiency challenge posed by the regulator.

In terms of designing incentives for the utility as a whole, the goal is to structure incentives to have an onerous impact, if performance targets are not satisfactorily met. Thus far, the RIC has applied

[12] For a full discussion on this issue, see Mugisha, Silver (2006). Managerial Incentive Plans for Water Utility Management: Practical Applications in Sub-Saharan African Water Companies.

[13] In many jurisdictions (GB, New Zealand, Ontario, AER), the regulator collects historical data through a process which is separate from the price review process.

[14] Ofgem in the UK had taken this approach in its price control for electricity distribution in 2017. https://www.ofgem.gov.uk/publications/guide-riio-ed1-electricity-distribution-price-control

mainly financial incentives[15] to change utility behaviour. In the future, the RIC may be guided according to the other types of incentives listed below:

- **Reputational** (Naming and Shaming) – where T&TEC's reputation is enhanced or damaged depending on whether the established targets are achieved or not. In fact, the reputational aspect is important to maintain sound relationships with customers and to boost confidence in potential foreign investors with respect to the economy.

- **Procedural** – where T&TEC is subjected to greater and more frequent information provision requirements, depending on the delivery of outcomes/targets established by the regulator. One option that had been implemented by Ofgem, is to fast-track the business plans of certain utilities that have established a good compliance record, with a built in penalty mechanism for deficiencies in the business plans[16]. The philosophy here is to reward utilities for submitting very good quality information and applying appropriate penalties to those that do not place sufficient emphasis on the accuracy and comprehensiveness of their business plans.

5.3 Improving Regulatory Reporting and Compliance

The RIC views Performance Reporting on T&TEC's technical and operational performance as an important element of the regulatory framework. Not only does it enable stakeholders to assess compliance with regulatory decisions and compare performance from one period to the other but frequent performance reporting also enhances the operations of the utility by encouraging active and informed stakeholder participation in the regulatory processes. While many of the existing reporting arrangements will remain, the RIC has considered that certain changes will improve reporting compliance, and the reliability of the data supplied, including:

- the utility must demonstrate that it has systems in place to provide on-time and materially unbiased data.;

[15] Including but not limited to performance targets set in the T&TEC Quality of Service Standards.
[16] Ofgem, Handbook for Implementing the RIIO Model, October 2010.
https://www.ofgem.gov.uk/publications/handbook-implementing-riio-model

- the engagement of an independent "Reporter", at the utility's expense, to conduct regular and detailed audits, in cases where the utility is found to have misreported information, or has not improved reporting standards to acceptable levels;

- greater self-certification will also be encouraged by requiring T&TEC's Management and/or Board to indicate in writing that Opex projections accurately reflect the underlying information. This would entail establishing a clearly documented internal procedure for accurate identification of Opex by activity;

- annual reporting on the current year's allowed and actual Opex by activity, identifying reasons for differences between allowed and actual expenditures; and

- establishing an annual reporting framework whereby T&TEC submits to the RIC, a report that is suitable for public release.

5.4 Treatment of Unforseen Costs

Most regulators use different mechanisms and tools to address unforeseen costs and to mitigate risks, as some uncertainty will inevitably remain when setting price limits. The mechanisms to address uncertainty include cost pass-through allowances for uncontrollable costs, reopeners (if revenue falls short by a specified minimum amount), logging up and down (inclusion of expenditure not previously allowed) and interim determinations. The RIC will continue to use these mechanisms when necessary and where appropriate.

6.0 CONCLUSION

The RIC is mandated by its guiding legislation to ensure that the service provider that operates under prudent and efficient management will earn sufficient revenue to finance necessary investment. As such, the RIC must endeavour to ensure that the approved operating expenditures are reflective of a utility operating in an efficient manner, maximising output and minimising costs, whilst at the same time not compromising service levels or service quality.

In the second price review, the RIC will adopt a relatively intrusive ex-ante review of Opex to determine whether costs are necessary and efficient. A combination of the bottom-up and top-down approaches will be used, thereby examining cost activities/items individually, and in some instances, benchmarking certain costs. This approach will allow the RIC to analyse data that can provide a number of useful insights into the detailed workings and practices of T&TEC, thus facilitating increased scope for identifying areas for operational and performance improvement.