REGULATED INDUSTRIES COMMISSION

Approach to Setting Operating Expenditure

November

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This paper examines the RIC's current approach to assessing operating expenditure, reviews the Trinidad and Tobago Electricity Commission's (T&TEC) actual Opex and compares this with the RIC's approved Opex for the first regulatory period, and discusses the RIC's proposed approach/measures for the second regulatory control period.

Consultative Document

1.0 Overview

The Regulated Industries Commission (RIC) is responsible for setting price controls for the electricity sector and does so within a regulatory framework that is governed by the RIC Act. As the economic regulator, the RIC's mandate is to ensure that services are provided to customers at the lowest reasonable overall cost. Over the past five years the RIC has adopted a regulatory framework (incentive regulation or RPI-X regulation) to ensure that this objective is achieved. This framework consists of a number of different elements, key among them being, the setting of challenging performance targets and incentives, to outperform those targets.

Operating costs account for a very significant portion of total costs and are directly recovered from customers through their bills. As a result, such costs can have notable impact on the final prices paid by customers. Consequently, the RIC views its decisions, vis-à-vis the appropriate level of operating expenditure (Opex) to be allowed into the revenue requirement, as critical, and therefore scrutinises the service provider's performance in this area very closely.

1.1 Purpose of the Document

This paper examines the RIC's current approach to assessing operating expenditure, reviews the Trinidad and Tobago Electricity Commission's (T&TEC) actual Opex and compares this with the RIC's approved Opex for the first regulatory period, and discusses the RIC's proposed approach/measures for the second regulatory control period.

1.2 Responding to this Document

All persons wishing to comment on this document are invited to submit their comments.

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2.0 Introduction

The RIC was established by Chapter 54:73 of the Laws of Trinidad and Tobago, the RIC Act, as an independent, statutory authority charged with the responsibility of regulating the Electricity and Water and Wastewater Sectors. As such, the RIC's functions, powers and duties are derived directly from its legislation. Moreover, the Act defines the parameters of all aspects of the RIC's operations and prescribes the broad approaches that may be considered with regard to the regulation of the utility sectors.

The RIC, according to Section (6)(1)(c) of the Act, has a duty "*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*". It 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 Act outlines the duration of the regulatory control period, as Section (48) mandates the RIC "*to review the principles for determining rates and charges for services every five years, or*

where the licence issued to the service provider prescribes otherwise, at such shorter interval as it may determine".

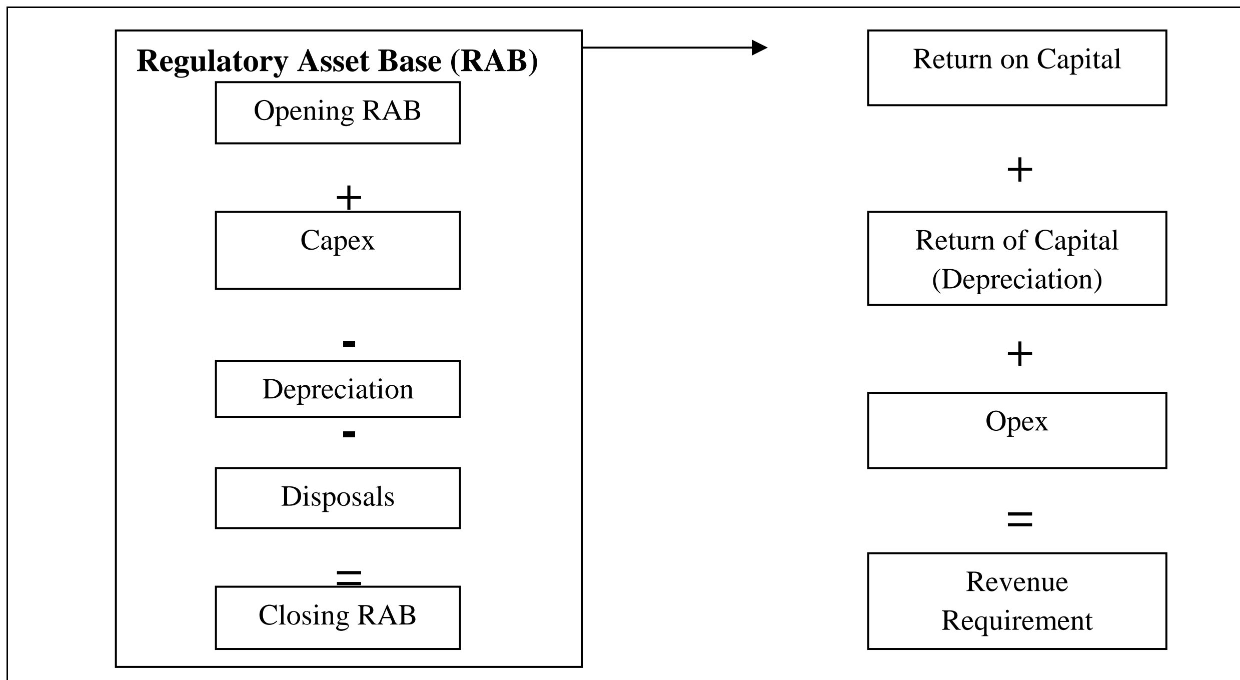
Working within this legal framework, the RIC establishes prices that are expected to recover the efficient costs of providing service, by applying the building block approach to the determination of service providers' costs and expected revenue requirements. This is done by considering the components or "building blocks", and is generally given by the following equation (**Figure 1** shows the main elements of the building-block approach):

$$Rev = (WACC \times RAB) + Dep + Efficient\ Opex$$

Where:

- *Rev is the allowed revenue requirement*
- *Dep is regulatory depreciation*
- *Opex is the forecasted efficient operating expenditure*
- *RAB is the regulatory asset base*
- *WACC is the weighted average cost of capital*
- $WACC \times RAB$ *establishes the return on capital allowed over the same period.*

Figure 1 – Building-block Approach to Revenue Requirement



In its determination of the efficient level of Opex that T&TEC would be allowed to recover through tariffs, the RIC had to give careful consideration and due weight to the need and ability of T&TEC to fund its operational activities, 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 regarding the associated expenditure items. Therefore, as the RIC prepares for the second review of prices in the sector, it must examine its approach to the setting of Opex to determine whether any changes are necessary.

3.0 RIC's Current Approach to Assessing Opex

The overall objective of assessing the service provider's Opex is to determine whether the proposed Opex is efficient, necessary and to be funded within the price limits. There are a number of methods that can be used by regulators to determine an efficient level of Opex that will be charged to the revenue requirement of service providers. In this process, regulators would separate "controllable" from "uncontrollable" costs. The former are those costs over which the utility has the ability to exercise some level of control. Such costs may be controlled by management. On the other hand, there are costs that may be determined by mechanisms outside of the purview of the service provider, over which management has little or absolutely no control. These costs might include license fees, fuel costs or obligations/payments under Power Purchase Agreements (PPAs). Such costs are said to be "uncontrollable" and are usually passed directly to the overall efficient level of Opex determined.

Operating costs cover the day-to-day costs of running the entity and typically include all the staff costs, repairs and maintenance, generation, fuel, overhead costs, etc. They amount to about 90% of the overall revenue requirement.

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 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. Equally, as demand grows, the nature of the service provided may change and further (previously unconsidered) opportunities for efficiencies may arise. Therefore, new factors may influence the appropriate allowances for operating costs. It is important to note here that T&TEC is a State-owned utility. This can have important implications for the incentives that management faces and how it responds to incentive-based regulation. It may therefore affect the approaches that are most appropriate.

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. 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 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 process/steps:

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

3.1 Baseline 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, i.e. 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 excluded 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 focussed on the breakdown of Opex into categories (the "bottom-up" approach) and sought justification from the service provider, with a more probing review. This was undertaken by analyzing expenditure by function, i.e. the cost to provide a particular service, and by activity, i.e. the cost of each activity comprising a service. The costs for meeting new demand from customers and for the effects of annual inflation were also allowed. The RIC also identified particular significant cost items where it felt that a more detailed review would have been more instructive, and was guided by the outcomes thereof. The assessment process also considered to what extent 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

As a next step, the RIC also considered wider information and identified a few cost items where it felt that comparison with other utilities (the "top-down" approach) would have been useful. Therefore, T&TEC's overtime expenditure, absenteeism rate, etc. were benchmarked against "best practice" targets. Benchmarking cannot be exact, and requires careful interpretation and accurate information. Accurate benchmarking requires comparisons to be like-for-like. The RIC recognized circumstances where it was appropriate to adjust results to account for local factors and to account for unavoidable statistical uncertainties 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 had 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 also utilized a generalized efficiency factor of 2.8% per year to reflect the efficiencies T&TEC was expected to achieve in costs of service provision and hence in prices for services.

The RIC 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 for a number of past years and thereafter, calculating future cost reductions on the assumption that the same rate of change (i.e. productivity improvement) will continue in the future. Consequently, T&TEC’s Opex was further reduced by $53.3 million over the regulatory control period.

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

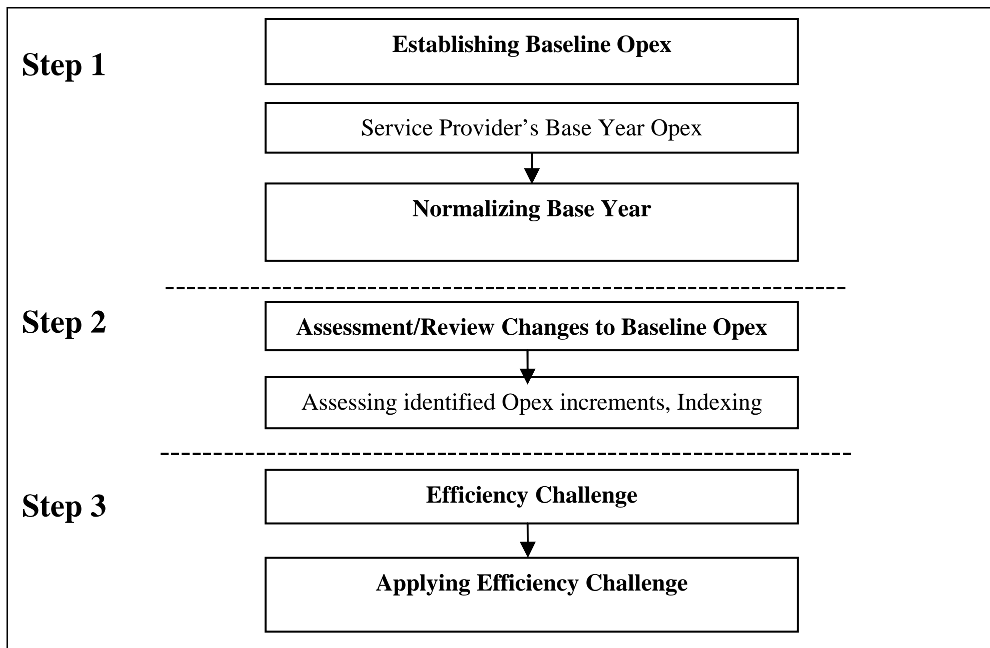
In summary, the analysis to determine the level of efficient Opex that would be recovered by tariffs comprised:

- 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 for 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 RIC's current approach to setting the allowed level of efficient Opex is depicted in figure 2 below.

Figure 2: RIC's Current Approach to Setting Opex



Having followed the process and approach outlined, the RIC, in its determination of efficient Opex, reduced T&TEC's proposed Opex by $905.74 million over the first control period 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%[1] over 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. Overall, the RIC reduced T&TEC's proposed Employee costs by $124 million.

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

- **Administration and General Expenses** – The RIC allowed 82.5% of 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, 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 of a total that represents 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, and 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** – Based on 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.

4.0 Opex Outturn

As indicated above, at the June 2006 price review the RIC challenged T&TEC to provide value for money by requiring it to improve its operating efficiency and reduce its Opex by $905.74 million less than 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 RIC's allowed, for the first regulatory control period, June 2006 – May 2011, is shown in table 1 and figure 3, below. T&TEC's operating expenditure was more than 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[2], 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 Actual Opex by Major Categories

Opex Item	June 2006 - May 2007	June 2007 - May 2008	June 2008 - May 2009	June 2009 - May 2010	June 2010 - May 2011	Total	Difference Actual - Approved	Approved from Actual as a Percentage of Actual[3]
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	273.61	287.3	301.65	316.72	332.54	1511.82		

[2] Opex totals shown in Table 1 include depreciation.

[3] These percentages measure errors in the forecast (RIC approved) and are given as: $\frac{(Actual\ Opex - Forecast\ Opex)\times 100}{Actual\ Opex}$

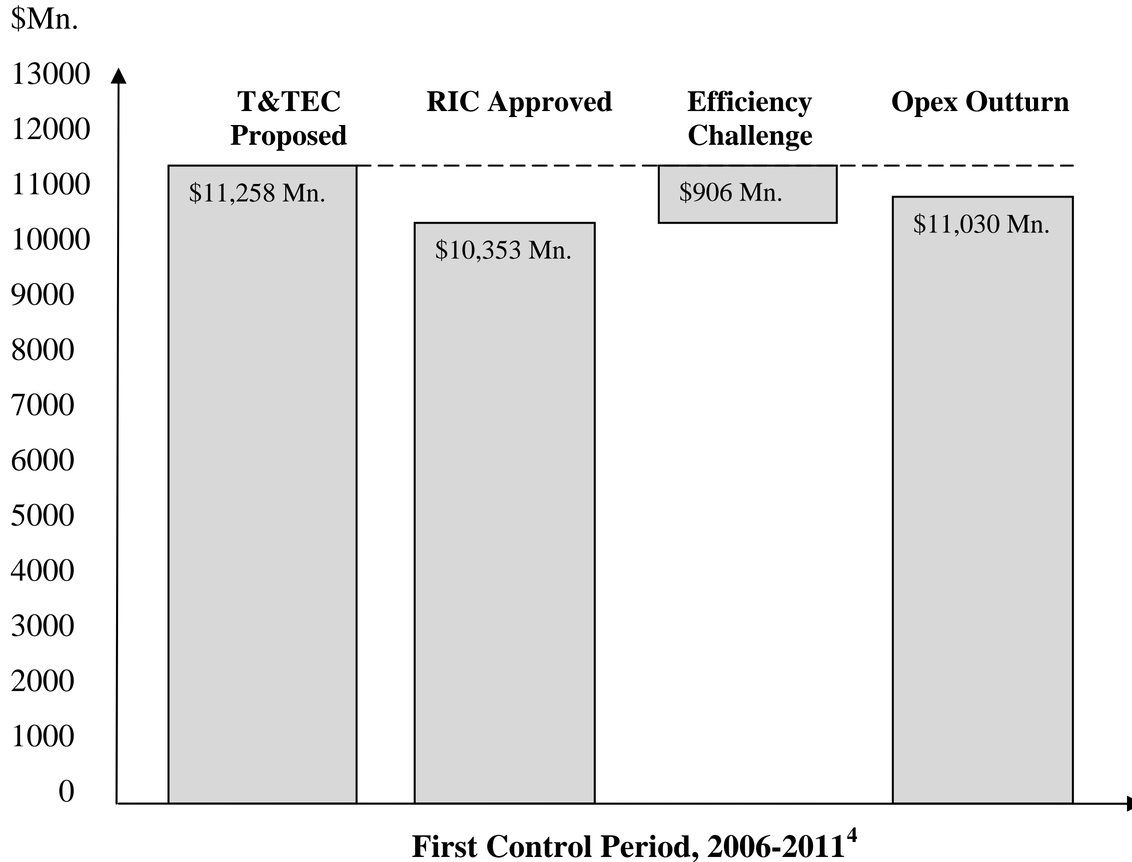
Opex Item	June 2006 - May 2007	June 2007 - May 2008	June 2008 - May 2009	June 2009 - May 2010	June 2010 - May 2011	Total	Difference Actual - Approved	Approved from Actual as a Percentage of Actual[3]
Approved								
T&TEC Actual	337.44	355.4	363.65	494.62	528.36	2079.47	567.65	27.30%
T&D Repair, Maintenance 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%
Total Expenditure:								
RIC Approved	1,796.00	1,892.34	2,166.40	2,353.35	2,617.71	10,825.80		
T&TEC Actual	1,963.27	2,175.82	2,191.06	2,711.94	2,385.38	11,427.47	601.67	5.27%

Notes:

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.

Total Expenditure includes other expenditure not shown, including depreciation.

Figure 3: RIC's Efficiency Challenge for Opex



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

[4] Figures do not include depreciation.

similar 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 new treatment of depreciation under IAS17[5] and the repair of the damaged submarine cable, would have also pushed T&D and Administration and General Expenses 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[6], 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 in fact 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 Determination. Additionally, T&TEC indicated that this figure is 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, increases in this category, according to T&TEC, have also resulted from the need to undertake urgent and critical maintenance work or from price increases since the release of the Final Determination.

5.0 Issues Arising from Opex Assessment and RIC's Proposals

The analysis of T&TEC's Opex performance clearly suggests that no concerted efforts were made 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.

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

5.1 Role of Incentives in State-owned Utilities

Regulators generally seek to create an environment that incentivises utilities and their owners. However, some of the more intractable problems as regards incentive regulation occur in sectors where state-ownership has been retained. It is generally argued that the regulatory instruments developed can easily become blunted under state-ownership, as it is the managers of these State-owned utilities who make the **actual** decisions. It is therefore argued that in such instances, managers are better able to pursue their own objectives. Consequently, management is less incentivised because the penalties for failure are minimal, managers are less frequently sacked, there is no real threat of bankruptcy as even a poor performing utility can expect to be "bailed out" by the State, and the disciplines of the market for corporate control are also absent. On the other hand, the rewards for success for these managers are also smaller.

While recognizing that the 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 have in place specific additional incentives to align incentive-based regulation with 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 therefore ensure that its concentration on the achievement of outputs/outcomes continues and that the 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 to be reported prominently in the media);**
- **more strict 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 incentives faced by managers in State-owned entities, to a large extent, will also depend on the Government that owns the entity. In addition, the incentives with regard to the outputs to be delivered are sometimes constrained because the Government may fund a substantial proportion

of the expenditure of the State-owned entity. **The RIC will strongly propose to Government to implement Management Incentive Plans (MIP), e.g. 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. Furthermore, there is increasingly a high degree of transparency being sought in these types of incentive packages.

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. In this regard, the RIC has already implemented a number of measures[7].

5.2 Role and Design of Incentives

Establishing incentives for performance are a key way that regulators encourage positive actions from service providers. Performance incentives are often focused on specific elements (e.g. losses) with an overall limit on the exposure of the entity. However, the impact of the incentive is likely to be both financial and reputational. **So far, the RIC has mainly applied financial incentives to change utility behaviour. In the future, the RIC would consider the extent to which other incentives may be used.** There are broadly three types of incentives that are relevant and have been utilized by regulators. These are:

- **Financial** – where service providers are rewarded or penalized depending on whether the established targets have been achieved or not;
- **Reputational** (Naming and Shaming) – where the reputation of the service provider is enhanced or damaged depending on whether the established targets are achieved or not. In fact, the reputational aspect can be very important and is being used effectively by many regulators; and

[7] See document, "Improving Transparency and Accountability in the Electricity and Water Sectors".

- **Procedural** – where service providers are subjected to greater and more frequent information provision requirements, depending on the delivery of outcomes/targets established by the regulator. "Good" service providers are rewarded by subjecting them to lesser degree of scrutiny as against "bad" service providers who are subjected to more intrusive forms of scrutiny.

As stated above, the RIC will utilize these incentives in the future to change utility behaviour.

5.3 Improving Regulatory Reporting and Compliance

Performance reporting on regulated services is an important element of the regulatory framework. It enables stakeholders to assess compliance with regulatory decisions and compare the performance of service providers. Frequent performance reporting will also enhance the operations of service providers by encouraging active and informed stakeholder participation in the regulatory processes. For the RIC, information reporting and compliance are, and will remain, central to effective regulation. The high profile of utilities and their impact on the economy and society more generally, demands that regulators devise robust and transparent, reporting regimes with which said utilities must comply. While many of the existing reporting arrangements will remain, the RIC will implement certain changes that will improve reporting compliance, and the reliability of the data supplied, including:

- **the service provider must demonstrate that it has systems in place to provide timely and materially unbiased data;**
- **the engagement of an independent "Reporter", at the service provider's expense, to conduct regular and detailed audits, in cases where the service provider is found to have misreported information, or has not improved reporting standards to acceptable levels;**
- **greater self-certification will also be encouraged by requiring the Board/Chairman to indicate in writing that Opex projections accurately reflect the underlying information;**
- **annual reporting on the current year's allowed and actual Opex by activity, identifying reasons for differences between allowed and actual expenditures;**

- **establishing an annual reporting framework whereby the service provider submits to the RIC, a report that is suitable for public release; and**
- **establishing a clearly documented internal procedure for accurate identification of Opex by activity.**

5.4 Treatment of Unforeseen Cost – Other Issues

Most regulators use different mechanisms and tools to address unforeseen costs and to mitigate risks, as some uncertainty will inevitably remain in the price limit setting package. Some of these include: interim determinations; cost pass-through; logging up and down; reopeners; and substantial effect clauses. The RIC will continue to use these mechanisms when necessary and where appropriate. **The RIC will also require the submission of detailed and well-justified business plans to mitigate uncertainties/unforeseen costs.** The RIC has, in fact, made proposals for the treatment of one such cost in the document, "Treatment of Pension Costs for Regulatory Decision-Making". This document has already been published and is available for public comment.

6.0 Conclusion

The Opex programme that is approved by the regulator is an important consideration in the price setting process, and directly and significantly, impacts on the final rates paid by customers. Moreover, 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. The RIC has adopted a relatively intrusive ex-ante review of Opex to determine whether costs were necessary and efficient. It utilized a combination of the bottom-up and top-down approaches, thereby examining cost activities/items individually, and in some instances using a benchmarking approach to guide the final level of Opex approved for these areas. To this end, the RIC made certain assumptions and took several decisions thereupon that would have led to its determination of an efficient level of Opex to be recovered by tariffs. This approach allows 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 enhancements, whilst simultaneously providing a measure of checks and balances through the benchmarking process.

In this document the RIC has made additional proposals to the assessment of Opex in the future, based on the performance of Opex outturn. The paper explored new approaches to expenditure and incentives that might deliver better outcomes.

The RIC invites comments on the ideas and approaches/proposals presented in this paper.